BANNER, AMY TAIS, Ph.D. The Effects of Spirituality on Anxiety and Depression among Breast Cancer Patients: The Moderating Effects of Alexithymia and Mindfulness. (2009)
Directed by Dr. Craig S. Cashwell. 230 pp.

Breast cancer is one of the most prevalent forms of cancer among women in the United States. In fact, the American Cancer Society estimated that over 180,000 new breast cancer cases would be diagnosed in 2008 (American Cancer Society, 2007). The diagnosis and treatment of breast cancer are associated with physical pain, unpleasant side effects, distressing changes in physical appearance and functioning, anxiety, depression, and existential concerns (Keitel & Kopala, 2000). Further, researchers have indicated that anxiety and depression exacerbate the burden of breast cancer (Badger, Braden, Mishel, & Longman, 2004; Bender, Ergyn, Rosenzweig, Cohen, & Sereika, 2005).

In addition, research results have suggested that spirituality buffers the anxiety and depression often associated with negative life events (Young, Cashwell, & Scherbakova, 2000). More specifically, spirituality has been associated with overall and emotional well-being among breast cancer patients (Romero et al., 2006). Researchers suggest, however, that in order to obtain a more robust picture of spirituality, the construct must be assessed within a broader context of well-being (Cashwell, Glosoff, & Hammond, in press; Cotton, Levine, Fitzpatrick, Dold, & Targ, 1999).

Alexithymia (restriction of emotions) and mindfulness are two constructs that contribute to the broader context of breast cancer patient well-being. Alexithymia has been associated with higher levels of depression among breast cancer patients (Cordova,

Cunningham, Carlson, & Andrykowski, 2001) whereas the practice of mindfulness has been associated with improved quality of life among breast cancer patients (Witek-Janusek, Albuquerque, Rambo Chroniak, Chroniak, Durazo-Arvizu, & Mathews, 2008). The purpose of this study, then, was to examine spirituality among breast cancer patients within a broader context of well-being by investigating the relationship between spirituality and both anxiety and depression as moderated by alexithymia and mindfulness among non-metastatic breast cancer patients. Also, because demographic factors may influence anxiety and depression among breast cancer patients, relationship status and stage of breast cancer were included in the research questions and analyses.

A sample of 69 women in treatment for non-metastatic breast cancer completed a mailed survey. These women had received surgical treatment within the past year or were currently receiving radiation, chemotherapy, hormone therapy, or biological therapy. Instrumentation included the Spirituality Assessment Scale (Howden, 1992); the Toronto Alexithymia Scale – 20 (Bagby, Parker, & Taylor, 1994a; Bagby, Parker, & Taylor, 1994b); the Five Facet Mindfulness Questionnaire (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006); the Trimodal Anxiety Questionnaire (Lehrer & Woolfolk, 1982); the Center for Epidemiologic Studies Short Depression Scale (Andresen, Malmgren, Carter, & Patrick, 1994); and a brief demographic questionnaire.

As expected, spirituality was negatively correlated with both anxiety and depression whereas alexithymia was positively associated with anxiety and depression. Unexpectedly, alexithymia was positively correlated with mindfulness, mindfulness was positively correlated with anxiety and depression, and spirituality was not significantly

correlated with either alexithymia or mindfulness. Also, spirituality, alexithymia, and mindfulness each were predictive of both anxiety and depression and accounted for 39% of the variance in anxiety and 43% of the variance in depression. Neither alexithymia nor mindfulness, however, operated as moderators of the relationship between spirituality and both anxiety and depression. Interestingly, in the prediction of anxiety, both alexithymia and mindfulness were stronger predictors than was spirituality. Regarding depression, however, spirituality was a stronger predictor than either alexithymia or mindfulness, accounting for 25% of the variance in depression by itself. Demographic factors played only a small role in the analyses. Stage of breast cancer accounted for a small amount of the variance in anxiety beyond what was accounted for by spirituality, alexithymia, and mindfulness. This study highlighted the importance of examining spirituality in a broader context of well-being. The findings provide direction for future research and useful implications for counselors working with breast cancer patients.

THE EFFECTS OF SPIRITUALITY ON ANXIETY AND DEPRESSION AMONG BREAST CANCER PATIENTS: THE MODERATING EFFECTS OF ALEXITHYMIA AND MINDFULNESS

by

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A Dissertation Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro

2009

Approved by

_____
Committee Chair

To my mother, Jeannette Banner.

For always believing in me and always loving me.

I will always be grateful.

And to the women who inspired this study.

Thank you for sharing such a sacred time in your lives with me.

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at The University of North Carolina at Greensboro.

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ACKNOWLEDGMENTS

Originally, I did not plan to write my dissertation about breast cancer patients. I had selected an entirely different population to research and write about. Then, I began a counseling internship where I had the opportunity to work with breast cancer patients. I witnessed their physical and emotional pain and listened to them as they struggled to accept their new realities. Even in the midst of their pain and distress, these women amazed me. They weren't just surviving, they were blossoming. They were peaceful, graceful, loving, and open; and they were focused on the important things in life. During our time together, it became clear that spirituality was at work among these women, and in them I witnessed a spirituality I never had before. These women were an inspiration to me and I wanted to learn from them. So, I changed that dissertation topic I had been so certain about and began this study. I am deeply grateful to these women for sharing such a sacred time with me and for allowing me to be a part of their lives.

I also am grateful for my dissertation committee members who helped me turn my inspiration into an actual study. With their help, I have learned more and had more fun than I ever expected. A dissertation is not something that can be done without help, and I could not have done this without theirs. Dr. Craig Cashwell, Dr. Christine Murray, Dr. Bennett Ramsey, and Dr. Robert Henson each have contributed something unique and invaluable to this process.

Craig, you have been exactly what I needed you to be, exactly when I needed it. I have heard that writing a dissertation can be a daunting and lonely process, but I was

never afraid and I never felt alone because I knew that you were there. I know that you worked every bit as hard as I did and that you were every bit as dedicated as I was. I am so grateful and I cannot thank you enough. Christine, you were always ready to listen when I showed up at your office door to share my recent progress and challenges. Thank you for your encouragement and your willingness to help. Ben, thank you for encouraging me to set aside the "lens" that I was accustomed to so that I could try on a different one; it has made all the difference. Bob, thank you for doing more than your fair share to help me make sense of the numbers. I am proud to say that a multiple regression actually makes sense to me now.

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CHAPTER I

INTRODUCTION

The American Cancer Society estimated that over 180,000 new breast cancer cases would be diagnosed and over 40,000 breast-cancer-related deaths would occur in the year 2008, making breast cancer the most prevalent form of cancer among women in the United States when one excludes all forms of skin cancer, which are considered as distinct forms of cancer (American Cancer Society, 2007; National Cancer Institute, 2007). Further, as many as one in every eight women in the United States will develop breast cancer within her lifetime (American Cancer Society, 2007). These numbers make it clear that this disease touches the lives of many women and their loved ones. Women who are diagnosed with breast cancer typically find that their lives are profoundly affected by the disease and its treatment (Helms, O'Hea, & Corso, 2008). In fact, 94% of cancer patients consider their diagnosis to be the most traumatic event of their lives (Petersen, Bull, Propst, Dettinger, & Detwiler, 2005).

One of the ways in which breast cancer can be experienced as traumatic is through the physical symptoms that accompany its diagnosis and treatment. Breast cancer is a disease in which cancer cells form in the tissues of the breast. Whereas the disease itself is accompanied by few symptoms, the same cannot be said about the treatment. Currently, the most common forms of traditional treatment for breast cancer are surgery, chemotherapy, radiation therapy, hormone therapy, or a combination thereof (National

Cancer Institute, 2008). Regardless of the specific type of treatment, painful and distressing side effects must be endured (Keitel & Kopala, 2000; National Cancer Institute, 2008). Fatigue, pain, fever, gastrointestinal complications such as constipation and diarrhea, nausea and vomiting, loss of appetite, dry mouth and oral sores, long-term sexual dysfunction, and difficulty sleeping are only a few of the physical effects that can result from the treatment of breast cancer (National Cancer Institute, 2008).

Further complicating these effects is the fact that breast cancer is associated with unique concerns related to a woman's identity. Often, the changes in physical appearance have a dramatic and negative effect on women's body image, sexuality, and overall experience of themselves as feminine beings (Keitel & Kopala, 2000). Following surgical treatment (mastectomy) of the breast, most women report feeling disfigured or lopsided (Boehmke & Dickerson, 2005). As traumatic as the loss of a breast is for these women, most women report that the loss of their hair is even more distressing and use words such as *intense, terrifying,* and *shameful* to describe the experience (Freedman, 1994). Yet another unpleasant physical effect of breast cancer is weight gain. Whereas many cancer patients experience unwanted weight loss, often breast cancer patients experience weight gain (Helms et al., 2008). In fact, Lankester, Phillips, and Lawton (2002) found that the majority of breast cancer patients experienced weight gain and reported this as a distressing change. Overall, many women with breast cancer feel as if their bodies have betrayed them and express that they feel attacked from within by the disease and from without by the treatment (Mitchell, Yakiwchuk, Griffin, Gray, & Fitch, 2007).

Considering these disturbing physical effects, it is not surprising that breast cancer patients often experience intense emotional and psychological suffering (Golant, Altman, & Martin, 2003; Helms et al., 2008; Keitel & Kopala, 2000; Spira & Reed, 2003; Stanton, 2003). In fact, Spira and Reed (2003) asserted that to *not* experience profound sadness or anxiety following the life-threatening diagnosis and life-altering treatment of breast cancer would be abnormal. Feelings of fear (Griffin & Fentiman, 2002; Puig, Lee, Goodwin, & Sherrard, 2006), loss of control (Spiegel & Kimerling, 2001), confusion (Pinto, Clark, Maruyama, & Feder, 2003), guilt (Puig et al.), anger (Pinto et al.; Puig et al.), tension (Pinto et al.), anxiety (Pinto et al.; Puig et al.), and depression (Pinto et al.; Puig et al.) are all common. In fact, researchers have suggested that as many as 45% of women with early stage breast cancer experience clinical levels of anxiety or depression (Kissane et al., 2004).

Often, a diagnosis of breast cancer triggers a preoccupation with the disease and a resulting anxiety (Boehmke & Dickerson, 2005; Tacon, Caldera, & Ronaghan, 2004). Women with breast cancer report a pronounced difficulty with thinking of anything other than their diagnosis and the ways in which it will affect their lives and those of their loved ones (Boehmke & Dickerson; Mitchell et al., 2007). Included in these anxieties are concerns about their ability to continue to function in their various roles, routines, and duties (Boehmke & Dickerson; Spiegel & Kimerling, 2001). Such anxiety may be present from the moment a woman becomes aware of suspicious symptoms and may recur long after treatment has been completed (Keitel & Kopala, 2000; Tacon et al.).

Also, women with breast cancer are likely to suffer from feelings of depression (Keitel & Kopala, 2000; Kissane et al., 2004; Stanton, 2003). Depression may be experienced immediately following a diagnosis of breast cancer (Stanton), in association with the treatment of breast cancer (Stanton), or triggered by the loss of a breast or the loss of identity as a healthy person (Keitel & Kopala). Such depression can have a profound impact on a woman's daily functioning as well as her overall well-being (Stanton) and willingness to continue treatment (Andersen, Kiecolt-Glaser, & Glaser, 1994).

Demographic factors may play a role in the incidence and prevalence of depression among women with breast cancer, as well. Specifically, breast cancer patients who are younger (Tercyak, Davis, & Loffredo, 2007), have been diagnosed with a higher stage of breast cancer Compas et al., 1999; Hanson Frost et al., 2000), are single (Maggard, Thompson, & Ko, 2003), have children (Shakin Kunkel, & Chen, 2003), or who have a family history of breast cancer (Friedman et al., 2006) may be more likely to report depression. Given these findings, it is important to consider demographic factors when examining anxiety and depression among women with breast cancer.

The anxiety and depression often experienced by women with breast cancer may best be understood when one considers that a diagnosis of breast cancer brings many women into psychological contact with their mortality (Keitel & Kopala, 2000; Spiegel & Kimerling, 2001). When confronted with one's own mortality, it is normal to become focused on existential matters (Cole & Pargament, 1999). Often, these existential

concerns are accompanied by thoughts of spiritual matters and the use of spiritual beliefs and practices to support the coping process (Cole & Pargament).

Spirituality is a complex construct that, while related to and often associated with religion, is a distinct phenomenon with its own factors. These factors include a sense of purpose and meaning in life, the strength of inner resources, a unifying interconnectedness with others, and transcendence beyond the occurrences of everyday life (Howden, 1992), factors that are of particular importance to women with breast cancer. As mentioned above, breast cancer patients often experience a new or renewed interest in existential matters, such as the purpose and meaning of life (Cole & Pargament, 1999; Mitchell et al., 2007). Also, they must draw upon their sources of inner strength to meet the physical and psychological challenges of diagnosis and treatment (Keitel & Kopala, 2000). Further, it is common for women with breast cancer to experience a sense of isolation and yet yearn for connection with others (Spiegel & Kimerling, 2001). Finally, some breast cancer patients seek and are able to find ways to transcend their suffering and fear of death (Mitchell et al.), although it is important to note that an unhealthy escape from the reality of the present is not desirable (Cashwell, Myers, & Shurts, 1994). As each of these four components of spirituality play an important role in the breast cancer experience, it follows that spirituality as a construct may be of particular importance to women with breast cancer. Researchers have found support for this theory. For example, Brady, Peterman, Fitchett, Mo, and Cella (1999) found that spirituality was associated with the ability to enjoy life in the midst of the cancer experience. Similarly, Fehring, Miller, and Shaw (1997) found that spiritual well-

being was associated with hope and positive mood in elderly cancer patients (Puig et al., 2006; Romero et al., 2006).

Increasingly, spirituality has been recognized as an important aspect of emotional well-being in the counseling literature (Briggs & Shoffner, 2006; Myers, Sweeney, & Witmer, 2000; Young et al., 2000). Specifically, researchers have begun to identify spirituality as a buffer that moderates the impact that negative life events have on anxiety and depression (Briggs & Shoffner; Cashwell et al., in press; Young et al.). For example, Young et al. found that spirituality moderated the relationship between negative life events and both anxiety and depression, such that spirituality decreased the deleterious impact of negative life events. Briggs and Shoffner also explored the relationship between spirituality and emotional well-being by examining the relationship between spirituality and depression in older adolescents and midlife adults. Results for both age groups demonstrated a negative relationship between spirituality and depression. In other words, higher levels of spirituality were associated with lower levels of depression in both older adolescents and midlife adults. In both of these studies, emotional well-being was more likely to occur in those individuals who reported higher levels of spirituality.

Whereas spirituality has been established as an important aspect of emotional well-being, some researchers have begun to argue that it is difficult to accurately assess spirituality without considering other aspects of a person's well-being (Cashwell et al., in press; Cotton et al., 1999). Based on the results of their study, Cotton et al. concluded that the relationship between spirituality and emotional well-being is "more complex and perhaps more indirect than previously considered" (p. 429). Because there are several

components of well-being that operate in conjunction with and affect one another (Myers et al., 2000), spirituality and its effects on emotional well-being may be influenced by other characteristics.

For example, spiritual beliefs and practices are sometimes misused in an effort to avoid dealing with emotional and psychological pain (Cashwell, Bentley, & Yarborough, 2007; Cashwell et al., 2004; Cashwell et al., in press). Whereas those engaging in this practice of *spiritual bypass* (i.e., using spirituality to avoid painful psychological work) might appear to have a strong spirituality due to their focus on spiritual matters and devotion to spiritual practices, they are neglecting their emotional well-being by denying or repressing their feelings or by escaping from their present reality (Welwood, 1983; Welwood, 2000; Whitfield, 1991). The importance of emotional expression has been well-established in both the counseling literature and the literature pertaining to breast cancer patients (Puig et al., 2006; Spiegel & Kimerling, 2001; Spira & Reed, 2003). Specifically, it has been proposed that breast cancer patients experience distressing emotions that need to be expressed (Spira & Reed) because not to do so may use valuable energy that is needed to cope with the disease and its treatment (Spiegel & Kimerling). Such restriction of emotional expression, or *alexithymia* (Bagby et al., 1994), also prevents full awareness of the present moment or the ability to be "in the moment" (Spira & Reed). Without this ability to be "in the moment," we are unable to recognize and accept the reality of our circumstances or "what is" (Spira & Reed). Further, without accepting the reality of present circumstances, one cannot move through and grow from those experiences (Cashwell et al., 2004).

These notions of being "in the moment" and recognizing "what is" are components of a construct called *mindfulness*. Mindfulness can be described as an uncritical, nonjudging awareness of the present moment experience (Baer et al., 2006). Recently, researchers have identified positive affect and decreased anxiety as some of the emotional benefits of mindfulness (McKee, Zvolensky, Solomon, Bernstein, & Leen-Feldner, 2007). Further, researchers have found that mindfulness affords benefits specific to cancer patients such as increased hope, recognition of inner strengths, decreased depression (Garland, Carlson, Cook, Lansdell, & Speca, 2007), and decreased anxiety (Tacon et al., 2004). For these reasons, and because of the importance of assessing spirituality within the broader context of overall wellness, it is important to pursue an understanding of how factors such as alexithymia and mindfulness influence the effects of spirituality on anxiety and depression among breast cancer patients.

Statement of the Problem

Spirituality has been associated with an increased ability to cope with life stressors in both adolescents and adults (Briggs & Shoffner, 2006; Young et al., 2000).There is a limited amount of research, however, that explores the role of spirituality in the breast cancer experience (Puig et al., 2006; Romero et al., 2006). This dearth in the literature is particularly surprising when one considers the existential and spiritual focus that is likely to occur in the face of such a life-threatening diagnosis (Cole & Pargament, 1999). Additionally, as it has been established that breast cancer patients often suffer from anxiety (Boehmke & Dickerson, 2005; Tacon et al., 2004) and depression (Keitel & Kopala, 2000; Kissane et al., 2004; Stanton, 2003), and because

researchers have indicated that spirituality moderates the impact of negative life events on anxiety (Young et al.) and depression (Briggs & Shoffner; Young et al.), it is important to take the next step and investigate the effect of spirituality on anxiety and depression among breast cancer patients.

Furthermore, in light of recent arguments that spirituality is difficult to assess accurately in a vacuum (Cashwell et al., 2007; Cashwell et al., in press), it also is important to take the investigation of spirituality one step further by examining it in a broader context of well-being. Both alexithymia and mindfulness have been identified as important constructs in the well-being of breast cancer patients (Garland et al., 2007; Puig et al., 2006; Spiegel & Kimerling, 2001; Spira & Reed, 2003; Tacon et al., 2004). Further, these constructs have been recognized as important to the genuine spiritual path and, therefore, to the empirical exploration of spirituality (Cashwell et al., in press). What is missing from the literature, then, is an investigation of the role of alexithymia and mindfulness in how spirituality affects anxiety and depression among breast cancer patients.

Purpose of the Study

The purpose of this study, then, was to fill this gap in the literature by investigating a) the relationships among spirituality, alexithymia mindfulness, anxiety, and depression for women with Stage I, Stage II, and Stage III breast cancer; b) how alexithymia and mindfulness moderate the effect that spirituality has on anxiety and depression among women with Stage I, Stage II, and Stage III breast cancer; and c) how demographics such as age, parental status, relationship status, stage of breast cancer, type

of surgical treatment received, and family's history of breast cancer affect anxiety and depression among women with Stage I, Stage II, and Stage III breast cancer. It was expected that this study would contribute to the current body of research pertaining to Stage I, Stage II, and Stage III breast cancer patients and the factors that may serve to increase their quality of life and overall well-being. Based upon the results of this study, it was believed that researchers would have a better understanding of the role of spirituality in the lives of breast cancer patients, and be able to direct future research questions accordingly. Further, it was expected that this study would inform future intervention studies to provide counselors and counselor educators with evidence-based procedures that will enhance counseling services for breast cancer patients. In addition, this study adds to the current body of research pertaining to spirituality and its effect on the ability to cope with negative life events. Finally, this study contributes to the literature pertaining to spiritual bypass by examining spirituality in the context of both emotional (i.e., alexithymia) and cognitive (i.e., mindfulness) well-being. Results inform counselors, counselor educators, and others involved with the psychosocial aspects of oncology.

Research Questions

The following research questions were addressed in this study:

1. What are the relationships among spirituality, alexithymia, mindfulness, anxiety, and depression for women with Stage I, Stage II, and Stage III breast cancer?

2. How do alexithymia and mindfulness moderate the relationship between spirituality as a predictor variable and anxiety as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer?
3. How do alexithymia and mindfulness moderate the relationship between spirituality as a predictor variable and depression as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer?
4. After controlling for the effects of spirituality, alexithymia, and mindfulness on anxiety, how do demographics such as age, parental status, relationship status, stage of breast cancer, type of surgical treatment received, and family's history of breast cancer further predict anxiety among women with Stage I, Stage II and Stage III breast cancer?
5. After controlling for the effects of spirituality, alexithymia, and mindfulness on depression, how do demographics such as age, parental status, relationship status, stage of breast cancer, type of surgical treatment received, and family's history of breast cancer further predict depression among women with Stage I, Stage II, and Stage III breast cancer?

Need for the Study

Currently, breast cancer affects over 180,000 American women each year and takes the lives of over 40,000 of those women (American Cancer Society, 2007; National Cancer Institute, 2007). This means that approximately one in every eight women in the United States will receive a diagnosis of breast cancer within her lifetime (American Cancer Society, 2007). Some of these women will survive and some will not; however,

all will experience physical and emotional distress as a result of their diagnosis and treatment. In addition, many breast cancer patients will experience social isolation, alienation, and a sense of being misunderstood (Keitel & Kopala, 2000; Spiegel & Kimerling, 2001). Often, these feelings are exacerbated by the lack of or premature withdrawal of support by friends and family (Keitel & Kopala, 2000) out of fear or awkwardness (Spiegel & Kimerling, 2001). Counselors are in a position to provide these women with the support that they need when others in their lives may be unable or unwilling to do so (Keitel & Kopala, 2000). For these reasons, it is imperative that counselors are equipped with thorough and accurate information on how to provide these women with the highest quality of care.

In order for the highest quality of care to become a reality, counselors need more information on the influence of spirituality on anxiety and depression and the influence of alexithymia and mindfulness among breast cancer patients. At this time, we do not have enough information about the relationship between spirituality and both anxiety and depression among Stage I, Stage II, and Stage III breast cancer patients nor how alexithymia and mindfulness might influence this relationship. The current study will address the need for this information by examining both how spirituality predicts anxiety and depression among women with Stage I, Stage II, and Stage III breast cancer and how alexithymia and mindfulness moderate this relationship.

The results of this study have the potential to increase counselors' knowledge related to working with breast cancer patients. Specifically, results will provide counselors with pertinent information about the potential efficacy of incorporating

spiritual and mindfulness interventions into therapeutic work with breast cancer patients. Further, these results will inform counselors' understanding of the complex nature of spirituality and its interaction with other factors of well-being. In both of these ways, this information will improve counselors' ability to assist clients in achieving their goals and has the potential to improve the well-being of breast cancer patients.

Definition of Terms

Spirituality is the dimension of one's being that is an integrating or unifying factor and that is manifested through unifying interconnectedness, purpose and meaning in life, innerness or inner resources, and transcendence (Howden, 1992). For the purposes of this study, spirituality will be measured with the Spirituality Assessment Scale (Howden).

Purpose and Meaning in Life is the process of searching for or discovering events or relationships that provide a sense of worth, hope, and/or reason for living/existence (Howden, 1992).

Innerness or Inner Resources is the process of striving for or discovering wholeness, identity, and a sense of empowerment. Innerness or inner resources are manifested in feelings of strength in times of crisis, calmness or serenity in dealing with uncertainty in life, guidance in living, being at peace with one's self and the world, and feelings of ability (Howden, 1992).

Unifying Interconnectedness is the feeling of relatedness or attachment to others, a sense of relationship to all of life, a feeling of harmony with self and others, and a feeling of oneness with the universe and/or a universal element or Universal Being (Howden, 1992).

Transcendence is the ability to reach or go beyond the limits of usual experience; the capacity, willingness, or experience of rising above; or the capacity for achieving wellness (Howden, 1992).

Higher Power is the term that will be used to represent the ultimate or absolute source of life throughout this study and is intended to be inclusive to monotheistic, polytheistic, and henotheistic, belief systems. For those whose belief system does not include a deity, *Higher Power* might refer to the Highest Self or True Self beyond the personal ego.

Alexithymia is the restriction of emotions as manifested by difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking (Bagby et al., 1994). For the purposes of this study, alexithymia will be measured with the Toronto Alexithymia Scale – 20 (Bagby et al.).

Mindfulness is awareness and is manifested by observing, describing, acting with awareness, nonjudging, and nonreacting (Baer et al., 2006). For the purposes of this study, mindfulness will be measured with the Five Facet Mindfulness Questionnaire (Baer et al.).

Depression is the presence of a depressed mood or loss of interest or pleasure in nearly all activities for a period of at least two weeks (American Psychiatric Association, 1994). For the purposes of this study, depression will be measured with the Center for Epidemiologic Studies Short Depression Scale (Andresen et al., 1994).

Anxiety is apprehensive expectation and is manifested behaviorally, cognitively, and somatically (Lehrer & Woolfolk, 1982). For the purposes of this study, anxiety will be measured with the Trimodal Anxiety Questionnaire (Lehrer & Woolfolk).

Adjuvant treatments are systemic treatments (e.g., chemotherapy, hormonal therapy, biological therapy) received in addition to surgical treatment of breast cancer, radiation of the breast, or both (Love, 1995).

Brief Overview

This study is presented over five chapters. This first chapter serves as an introduction to breast cancer, the anxiety and depression often experienced by breast cancer patients, the effect of spirituality on anxiety and depression, and the possibility that the impact of spirituality is influenced by other factors such as alexithymia and mindfulness. The purpose of the study, statement of the problem, and need for this study also are discussed in this introduction. Additionally, definitions of key terms to be utilized in the remainder of this study are provided. The second chapter includes a thorough review of the literature pertaining to breast cancer, the emotional effects of breast cancer, spirituality, alexithymia, and mindfulness. The third chapter contains the methodology used in the study, including participants, sampling method, instruments, and data analyses. The fourth chapter presents the results by addressing each research question. Finally, the fifth chapter summarizes the study, discusses its limitations, and provides recommendations for future research and practice pertaining to the influence of spirituality on anxiety and depression among breast cancer patients as influenced by alexithymia and mindfulness.

CHAPTER II

REVIEW OF RELATED LITERATURE

Cancer is a group of diseases in which abnormal cells divide without control and invade other tissues (National Cancer Institute, 2007). Cancer is the second most common cause of death and accounts for as many as one of every four deaths in the United States (American Cancer Society, 2007). Despite advances in cancer research and treatment that have led to improved prognoses and symptom management, a diagnosis of cancer continues to bring intense physical and emotional pain and distress (Garland et al., 2007; Spiegel, 1993).

Prevalence of Breast Cancer

When one excludes all forms of skin cancer, which are considered to be distinct forms of cancer, breast cancer is the most prevalent form of cancer among women in the United States (American Cancer Society, 2007; National Cancer Institute, 2007). The disease can form in both men and women, although its incidence among men is rare and accounts for less than one percent of all cases of breast cancer (National Cancer Institute, 2007). The American Cancer Society and National Cancer Institute both estimated that over 180,000 new breast cancer cases would be diagnosed and over 40,000 breast-cancer-related deaths would occur in 2008. Further, as many as one in every eight women in the United States will be diagnosed with breast cancer within her lifetime (American Cancer Society, 2007). This prevalence indicates that breast cancer impacts the lives of many

women and their families in our society. In order to best understand the impact that breast cancer has on the women who receive its diagnosis, it is important to understand the physical nature of the disease.

The Biology of Breast Cancer

Breast cancer is a disease in which cancer cells develop in the tissues of the breast; it typically forms in the lobules, which are the glands that produce milk, and ducts which are tubes that deliver milk to the nipple (National Cancer Institute, 2007). Breast cancer begins when the normal process of cell growth continues when the body does not need new cells and when old cells do not die when they should (National Cancer Institute, 2007). These extra cells sometimes become a tumor or a mass of tissue (National Cancer Institute, 2007). Tumors can be benign or malignant; however, only malignant tumors are cancerous (National Cancer Institute, 2007). Malignant tumors sometimes grow back even after they have been surgically removed (National Cancer Institute, 2007). Further, cells from these tumors may spread to nearby tissues or even to distant parts of the body (National Cancer Institute, 2007). When these cells spread beyond the original tumor and its surrounding tissues to distant parts of the body, they do so by separating from the original tumor and entering either the bloodstream or lymphatic system to form new tumors in distant parts of the body (National Cancer Institute, 2007). When cancer has spread in such a manner, it is said to have metastasized (National Cancer Institute, 2007). Doctors examine both the extent to which the breast cancer has spread and the size of the tumor to determine what type of treatment is needed (National

Cancer Institute, 2007). These two pieces of information also determine the stage of the breast cancer (National Cancer Institute, 2007).

Stages of Breast Cancer

The seriousness of a breast cancer diagnosis is related to the stage of the disease at the time of its diagnosis (American Cancer Society, 2007). There are four stages of breast cancer and each one indicates the extent to which the cancer cells have spread to surrounding tissue (American Cancer Society, 2007). Stage I breast cancer is considered to be the earliest stage of breast cancer and is diagnosed before cancer cells have spread beyond the breast and when the tumor in the breast is less than two centimeters in diameter (National Cancer Institute, 2007). Stage II breast cancer is diagnosed when a tumor is found in underarm lymph nodes but not in the breast, when a tumor in the breast is both less than two centimeters in diameter and has spread to the underarm lymph nodes, or when a tumor in the breast is larger than two centimeters in diameter but has not spread to the underarm lymph nodes (National Cancer Institute, 2007). Stage III breast cancer is diagnosed when a tumor is found in the underarm lymph nodes that are connected to each other or in the lymph nodes near the breastbone but not in the breast, when a tumor in the breast is larger than two centimeters and has spread to underarm lymph nodes that are attached to each other or the lymph nodes near the breastbone, when the tumor has spread to the chest wall and/or the skin of the breast, or when the tumor has spread to the lymph nodes above or below the collarbone (National Cancer Institute, 2007). Stage IV breast cancer is considered to be metastatic breast cancer and is diagnosed when the cancer has spread beyond the breast to other parts of the body, most

often the bones, liver, or brain (National Cancer Institute, 2007). The stage of the breast cancer has an effect on the type of treatment, or combination of treatments, that are used.

Treatment of Breast Cancer

There are two types of treatment for breast cancer, local therapy and systemic therapy (National Cancer Institute, 2007). Local therapy includes surgery and radiation and focuses on a distinct area of the body. Conversely, systemic therapies, including chemotherapy, hormone therapy, and biological therapy, are designed to destroy cancer cells throughout the entire body by way of the bloodstream (National Cancer Institute, 2007). Systemic treatment can be used before local treatment as a way to shrink the tumor, after local treatment to decrease the chance of the breast cancer's recurrence, and to treat breast cancer that has spread to distant parts of the body (National Cancer Institute, 2007).

Surgical Treatment of Breast Cancer

Surgery is the most common treatment for breast cancer and several types of surgery are used to treat the disease (National Cancer Institute, 2007). Each of these types of surgery has its own distinct benefits and risks and will change a woman's appearance in some way (National Cancer Institute, 2007). The two main categories of surgery that are used for the treatment of breast cancer are breast-sparing surgeries and surgeries that remove the breast, commonly referred to as mastectomies (National Cancer Institute, 2007).

Breast-sparing surgeries. Breast-sparing surgeries include lumpectomies and partial mastectomies (National Cancer Institute, 2007). A lumpectomy removes the tumor

and a small amount of the healthy tissue surrounding it (National Cancer Institute, 2007). A partial mastectomy removes the tumor, some of the breast tissue around the tumor, the lining over the chest muscles below the tumor and, usually, some of the lymph nodes under the arm (National Cancer Institute, 2007).

Side effects of these surgeries include pain and tenderness at and around the incision, as well as a risk of infection and bleeding (National Cancer Institute, 2007). In addition, surgery may cause nerve damage resulting in decreased sensation or tingling in the breast (National Cancer Institute, 2007). If lymph nodes are removed, the flow of lymphatic fluid may be impeded, possibly resulting in painful swelling of the arm and hand (National Cancer Institute, 2007). Finally, a change in the size and shape of the breast will be experienced (Keitel & Kopala, 2000; National Cancer Institute, 2007).

Mastectomies. Mastectomies are operations that remove the breast and, typically, the lymph nodes under the arm (National Cancer Institute, 2007). The surgeon also may remove both the lining over the chest muscles and the chest muscle itself (National Cancer Institute, 2007). In these cases, the mastectomy is referred to as a modified radical mastectomy (National Cancer Institute, 2007). As with breast-sparing surgeries, the side effects of mastectomies include pain and tenderness as well as a risk of infection and bleeding (National Cancer Institute, 2007). In addition, mastectomies may result in nerve damage that causes numbness or tingling in the chest, underarm, shoulder, and upper arm or a sensation of tightness in the skin where the breast was removed (National Cancer Institute, 2007). These unpleasant sensations may be intensified when the woman's chest is touched (Keitel & Kopala, 2000). If lymph nodes are removed, it is possible that the

flow of lymphatic fluid will be impeded and may result in painful swelling of the arm and hand (National Cancer Institute, 2007). Further, arm and shoulder muscles are likely to feel stiff and weak. The removal of the breast also may compromise balance and lead to tension and pain in the neck and back. The woman's chest will be flat and, in some cases, concave (Keitel & Kopala).

Regardless of the type of surgery, it seems apparent that women who have any type of surgery for breast cancer will experience dramatic and distressing physical effects. Logically, the surgery, coupled with anxiety and fear both related to the cancer and the surgery, would occasion emotional and psychological sequelae. Surprisingly, however, few researchers have investigated the psychological effects of breast surgery (Andersen & Farrar, 2001; Keitel & Kopala, 2000).

Psychological and Emotional Effects of Surgical Treatment

Though research in this area is limited, results from what research has been conducted suggests that women who receive surgical treatment of breast cancer experience struggles related to body image, sexuality, and their overall experience of themselves as feminine beings (Arena et al., 2006; Keitel & Kopala, 2000). In fact, for up to a year following surgery, and sometimes for longer periods of time, breast cancer patients express concerns about the appearance of their bodies, their scars, the fit of their clothing, and wearing a prosthetic breast (Keitel & Kopala). Breast cancer survivors in one study specifically stated that losing a breast affected how they saw themselves as women and that it was difficult to adjust to the loss (Oxlad, Wade, Hallsworth,

Koczwara, 2008) while those in another study reported feeling disfigured or lopsided (Boehmke & Dickerson, 2005).

Further, following surgical treatment of breast cancer, women reported concerns related to their romantic relationships and their ability to be in romantic relationships (Oxlad et al., 2008). Specifically, women who were unpartnered at the time of surgery were fearful that they were no longer physically attractive after the loss of a breast and that this would impede their ability to experience future romantic relationships (Oxlad et al.). Women who were partnered at the time of surgery expressed fear that their current romantic partners would no longer find them physically attractive (Oxlad et al.). In addition to concerns about their femininity, many women experience anxiety and intrusive thoughts following surgery (Antoni et al., 2006). Specifically, women who received breast-sparing surgical treatment feared that they should have elected to receive a mastectomy whereas women who received a mastectomy feared that they would regret that they did not insist upon a breast-sparing surgery (Kietel & Kopala, 2000). Furthermore, as these women are struggling to cope with their anxiety, grieve the loss of a breast, adjust to a new body image, and heal from their surgeries, they often begin adjuvant, or follow-up, treatment which presents additional physical and psychological side effects.

Adjuvant Treatment of Breast Cancer

Adjuvant treatment is treatment that is provided following the primary treatment of breast cancer. The purpose of adjuvant treatment is to increase the chances of a cure.

Adjuvant therapy may include radiation therapy, chemotherapy, hormone therapy, or biological therapy (National Cancer Institute, 2008).

Radiation. Radiation therapy is one adjuvant treatment that is sometimes used to destroy cancer cells that may remain following both breast-sparing surgeries and mastectomies (National Cancer Institute, 2007). Radiation therapy focuses high-energy rays on the breast and/or areas around the breast (National Cancer Institute, 2007). Typically, these treatments are given five days a week for a period of five to six weeks (Keitel & Kopala, 2000). Possible side effects of radiation therapy include red, tender, and itchy skin in the treated area, a heavy and tight sensation of the breast, skin that becomes moist towards the end of treatment, fatigue (National Cancer Institute, 2007), and asymptomatic rib fractures (Keitel & Kopala). It is possible that a permanent change in skin color will result from radiation therapy (National Cancer Institute, 2007). Also, it may be uncomfortable to wear bras and tight clothing during the period of radiation therapy (National Cancer Institute, 2007).

Chemotherapy. Chemotherapy kills cancer cells by introducing anticancer drugs into the bloodstream orally in the form of a pill or by injection into a vein (National Cancer Institute, 2007). Typically, a combination of drugs is used (National Cancer Institute, 2007) and treatment ranges from three to six months but is sometimes longer (Keitel & Kopala, 2000). Although most women receive chemotherapy on an outpatient basis, some women may need to stay in the hospital while receiving chemotherapy (National Cancer Institute, 2007).

Possible side effects of chemotherapy include increased risk of infection, increased bruising or bleeding, fatigue, hair loss, poor appetite, nausea and vomiting, diarrhea, oral sores, and tingling or numbness in the hands or feet (National Cancer Institute, 2007). Further, some women develop leukemia, or cancer of the blood cells, as a result of chemotherapy (National Cancer Institute, 2007). Other women who receive chemotherapy may experience a weakening of the heart (National Cancer Institute, 2007). Finally, chemotherapy can damage the ovaries, interfering with the production of hormones and leading to symptoms of menopause such as hot flashes and vaginal dryness. Some women become infertile, and for women over the age of 35, it is unlikely that fertility will return at the end of chemotherapy (National Cancer Institute, 2007).

Hormone Therapy. Hormone therapy is sometimes used when treating breast cancer. In essence, drugs are introduced to the system that prevent cancer cells from receiving the hormones that they need to grow (National Cancer Institute, 2007). This type of treatment can be accomplished through the administration of drugs into the bloodstream such as tamoxifen, an estrogen blocker, or by surgical removal of the ovaries (National Cancer Institute, 2007). Tamoxifen is typically taken twice a day for three to five years (Keitel & Kopala, 2000). Possible side effects of tamoxifen include hot flashes, vaginal discharge, irregular menstrual periods, headaches, fatigue, nausea and vomiting, vaginal dryness or itching, irritation of the skin around the vagina, and skin rash. More serious side effects of tamoxifen include harm to the unborn baby of a pregnant woman, blood clots, and cancer of the uterus requiring surgical removal of the ovaries (National Cancer Institute, 2007). Side effects of surgical removal of the ovaries include an

immediate occurrence of menopause. The side effects of this surgically induced menopause typically are more severe than those caused by naturally occurring menopause (National Cancer Institute, 2007).

Biological Therapy. Biological therapy works by boosting the natural ability of the immune system to fight cancer through the administration of a drug called Herceptin into the vein (National Cancer Institute, 2007). Possible side effects of Herceptin include fever and chills, pain, weakness, nausea and vomiting, diarrhea, headaches, difficulty breathing, or rashes. More serious side effects include possible heart damage, heart failure, and lung failure (National Cancer Institute, 2007). Obviously, there are a variety of adjuvant treatments and each has physical side effects. In addition to these physical side effects, there are significant psychological and emotional effects.

Psychological and Emotional Effects of Adjuvant Treatment

Regardless of whether adjuvant treatment consists of radiation, chemotherapy, hormone therapy, biological therapy, or a combination thereof, painful psychological and emotional effects often are reported by breast cancer patients receiving these treatments. These psychological and emotional effects are likely to begin prior to the onset of adjuvant treatment when breast cancer patients experience anticipatory anxiety and fear regarding the upcoming treatment and its potential side effects (Keitel & Kopala, 2000). Once adjuvant treatment has begun, breast cancer patients sometimes express surprise and dismay at the length of their treatment, which continually reminds them that their experience with breast cancer is not over (Keitel & Kopala).

Researchers have found that women who receive adjuvant treatment experience higher levels of anxiety and depression than women who do not receive adjuvant treatment (Ganz, Polinsky, Schag, & Heinrich, 1989). Specifically, breast cancer patients who received chemotherapy following surgical treatment experienced more distress and sexual dysfunction (Ganz et al., 2004) than breast cancer patients who received surgical treatment alone. Also, researchers have found that radiation is associated with significant psychological stress in the form of anxiety and depression (Nunes et al., 2007) and that some breast cancer patients have discontinued tamoxifen treatment secondary to depression (Thompson, Spanier, & Vogel, 1999). These psychological and emotional effects likely are associated with the distressing physical side effects of adjuvant treatment. For example, Oxlad et al. (2008) found that hair loss and the loss of libido often experienced as a result of adjuvant treatment negatively impacted women's self-esteem and feminine identity. Further, Stanton (2003) reported that such physical side effects often led to depression.

Psychological and Emotional Effects of Breast Cancer

In addition to the psychological and emotional effects of the treatment of breast cancer (surgical and adjuvant), psychological and emotional struggles also are associated with the experience of breast cancer itself. Although it is not possible to fully separate out the effects of the diagnosis and the effects of the treatment process, breast cancer is a life-threatening illness and often its diagnosis alone brings intense fear and sadness (Golant et al., 2003; Helms et al., 2008; Keitel & Kopala, 2000; Spiegel, 1993; Spira & Reed, 2003; Stanton, 2003). As many as 91% of breast cancer patients indicated that their experience

of breast cancer was traumatic (Mehnert & Koch, 2007). Immediately after receiving the diagnosis, women may experience a sense that their life is over or that they will never experience joy in their life again (Spiegel). Feelings of loss of control (Spiegel & Kimerling, 2001), helplessness (Mehnert & Koch), uncertainty about the future (Compas et al., 2006; Mehnert & Kock), confusion (Pinto et al., 2003), guilt (Compas et al.; Puig et al., 2006), anger (Pinto et al.; Puig et al.; Spiegel), anxiety (Pinto et al.; Puig et al.; Spiegel), and depression (Pinto et al.; Puig et al.; Spiegel) also are common. In fact, the results of one study indicated that as many as 45% of women with early stage breast cancer experienced clinical levels of anxiety or depression (Kissane et al., 2004). The most common psychological and emotional effects of breast cancer appear to be anxiety, depression, and spiritual or existential concerns.

Negative Effects of Psychological and Emotional Distress

The psychological and emotional effects of breast cancer not only increase the emotional burden of breast cancer, but the physical one as well. Depression has been linked to increased frequency, intensity, and impact of the physical symptoms of breast cancer (Badger et al., 2004) and to significantly decrease adherence to treatment among breast cancer patients (DiMatteo, Lepper, & Croghan, 2000). Further, depression has been associated with decreased immune functioning (Fann et al., 2008) and reduced survival rates (Schou, Ekeburg, Ruland, Sandvik, & Karesen, 2004; Watson, Haviland, Greer, Davidson, & Bliss, 1999) among breast cancer patients. Finally, 28% of breast cancer patients indicated that depression was one of the most problematic and disturbing aspects of the breast cancer experience (Badger et al., 2004). For all of these reasons,

attention to the psychological and emotional effects of breast cancer is vital to the care of every woman regardless of age, stage, type of treatment, parental status, or marital status (Holland, 1996).

Depression

Whereas estimates of the rate of depression among breast cancer patients vary, it is commonly acknowledged that feelings of depression are a critical emotional component of the breast cancer experience (Rabinowitz, 2002). Because breast cancer is associated with unique factors that are likely to influence mood, research results on depression in other cancer populations cannot be assumed to apply to this population (Fann et al., 2008). Researchers who have examined depression among breast cancer patients have found that many women experience what would be considered "normal" levels of depression in response to the life-threatening diagnosis, whereas a smaller subset experience clinically significant levels of depression (Fann et al.). Further, prevalence rates of depression among breast cancer patients vary based on whether researchers employ a dichotomous rating of depressed versus not depressed or whether they consider sub-clinical levels of depression to be relevant as well. It seems that simplifying the understanding of emotional distress among breast cancer patients by dichotomizing depression may fail to capture the nuances of the psychological and emotional suffering among this population. Prevalence rates of depression also vary depending on the breast cancer patients' phase of illness (Hanson Frost et al., 2000).

Consistent with the population of interest for this study, the focus of this literature review will be on breast cancer patients who currently are receiving adjuvant (post-

surgical) treatment. Overall, researchers who have examined depression using the dichotomous distinction of depressed versus not depressed consistently find that 10-33% of women who are in the treatment phase of breast cancer experience clinically significant levels of depression (Fann et al., 2008). This is a large range, indicating a lack of clarity on the prevalence of clinical depression.

Although, as noted above, researchers have found a broad range of prevalence estimates of depression, there does seem to be some consensus that approximately one-third of breast cancer patients will have clinically significant levels of depression. For example, Tercyak et al. (2007) examined symptoms of depression and other behavioral risk factors among newly diagnosed breast cancer patients. Their sample of 147 women consisted of both African-American (47%) and Caucasian (53%) women who had been diagnosed with Stage 0 (abnormal cells in the lining of a lobule or duct that have not spread to the lobule or duct itself, rarely invades surrounding tissues), I, II, or III breast cancer within the past six months and who were in treatment. Depression was measured using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). Results suggested that 33% of this sample experienced clinically significant symptoms of depression. Similarly, Badger, Segren, Dorros, Meek, and Lopez (2007) examined depression among breast cancer patients. Their sample included 96 women who had been diagnosed with Stage I, II, or III breast cancer and who were receiving adjuvant treatment at the time of the study. Depression was measured using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff). Results suggested that 32% of this sample experienced clinically significant levels of depression. Finally, Epping-Jordan et al.

(1999) examined the process of psychological adjustment among breast cancer patients. Their sample consisted of 80 women diagnosed with Stage I, II, III, or IV breast cancer who were assessed for depression at diagnosis, three months post-diagnosis, and six months post-diagnosis. Depression was measured using the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983). Results suggested that 34% of the sample experienced clinically significant levels of depression at all three assessment times.

Further, though, and as stated above, it seems clear that using clinically significant levels of depression as the criteria paints an incomplete picture. Many breast cancer patients struggle with symptoms of depression regardless of whether these symptoms reach clinically significant levels. For example, in a seminal study, Hughes (1982) examined both clinically significant and sub-clinical levels of depression and found variance in the prevalence rates. Her sample consisted of 44 women with non-metastatic breast cancer who had received mastectomies at a treatment center in England. Participants completed the General Health Questionnaire (GHQ; Goldberg, 1972) and a semi-structured interview at time of surgery. Among these women, 18% reported symptoms of depression that significantly impaired functioning whereas 36% reported milder depressive symptoms that were nonetheless distressing. Later, Bender et al. (2005) examined the prevalence of both clinical and sub-clinical levels of depression among women with breast cancer. Their sample included two distinct groups, women with Stage I and Stage II breast cancer who had received surgical treatment and would soon receive adjuvant treatment (n = 40) and women with Stage I, Stage II, and Stage III breast cancer who had received surgical treatment and were currently receiving adjuvant treatment (n =

87). Depression was measured using the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971). Results suggested that 82.5% of the first group of breast cancer patients and 54.5% of the second group reported feelings of depression but the majority of these women did not meet criteria for clinically significant levels of depression. Thus, depressive symptoms may appear in a substantial percentage of women diagnosed with breast cancer.

Furthermore, depression appears to be a central aspect of the breast cancer experience. Badger et al. (2004) found that 28% of women in treatment for breast cancer reported that depression was one of the most problematic and disturbing aspects of their breast cancer experience even when considering the physical side effects of their treatment. Clearly, then, depression is a troubling aspect of breast cancer regardless of its prevalence at a clinically significant level. Additionally, the incidence of depression in breast cancer patients can be better understood by taking demographic information into consideration.

Demographic influences on depression. Age is one of the demographics that interacts with depression in breast cancer patients. In general, younger breast cancer patients are more likely to report depression and to report higher levels of depression as well. In a study of 147 breast cancer patients, Tercyak et al. (2007) found that older women (those over the age of 52) were 36% less likely to report symptoms of depression than younger women (those under the age of 52). In another study of 408 breast cancer patients, Vaughan-Adams (2007) found that women under the age of 50 experienced significantly higher levels of hopelessness, worthlessness, nervousness, and restlessness

than women over the age of 50. In yet another study of 81 breast cancer patients, Friedman et al. (2006) found that older women reported higher overall emotional well-being than younger women. This straightforward analysis of depression in younger versus older breast cancer patients does not capture, however, the full picture of the interaction between age and depression. For instance, Epping-Jordan et al. (1999) found that although younger age was predictive of higher symptoms of anxiety and depression at time of diagnosis, no differences were reported in emotional and psychological adjustment across the course of treatment and recovery. Thus, it seems that young women find the diagnosis and early phases of breast cancer more traumatic than older women but that they are able to cope equally well once the initial trauma of diagnosis has passed.

Another factor that plays a role in the prevalence and incidence of depression in breast cancer patients is the stage of disease progression. Compas et al. (1999) argued that the stage of breast cancer is a potentially confounding variable and should be controlled for when studying breast cancer patients. For example, in a study of 225 breast cancer patients diagnosed with varying stages of disease progression, Hanson Frost et al. (2000) found that women with Stage IV breast cancer reported higher concerns about their physical health and functioning, social functioning, and overall impact of the disease on their lives.

Also, familial factors are related to rates of depression in breast cancer patients. For example, breast cancer patients who are parents are likely to experience concerns related to their ability to continue to care for their children (Shakin Kunkel, & Chen, 2003). Very little research has been performed, however, that examines the specific ways

in which this affects the emotions of breast cancer patients (Lewis, Hammond, & Woods, 1993). Further, single, divorced, and widowed breast cancer patients reported more emotional distress than married women and were found to have a higher rate of mortality than women who were partnered even after controlling for age and stage of disease (Maggard et al., 2003). Finally, women with a family history of breast cancer reported more mood disturbance than women without such histories in a study by Friedman et al. (2006). Thus, it seems important to take demographic variables into consideration when examining the prevalence and incidence of depression in breast cancer patients. After depression, anxiety is the second most common emotional and psychological disturbance experienced by breast cancer patients (Andersen & Farrar, 2001).

Anxiety

Several researchers have studied the prevalence and incidence of anxiety among breast cancer patients and have found it to be of significant concern for these women (Knobf, 2007; Tacon et al., 2004; Targ & Levine, 2002). In fact, the prevalence of anxiety is so commonly acknowledged that when 18 out of 44 breast cancer patients in one study reported normal or low levels of anxiety, the researchers suggested that these participants probably denied their anxious feelings as a form of psychological defense (Millar, 1993). Those breast cancer patients who do experience symptoms of anxiety report that these are provoked by fears of pain and changes in physical appearance, concerns about the overall disruption to their lives, worry related to child care, financial difficulties, and fears about death and dying (Andersen & Farrar, 2001).

In what has become a seminal study, Hughes (1982) investigated the prevalence and incidence of anxiety among breast cancer patients. Her sample consisted of 44 women with non-metastatic breast cancer who had received mastectomies at a treatment center in England. Participants completed the General Health Questionnaire (GHQ; Goldberg, 1972) and a semi-structured interview soon after receiving surgical treatment. At this time, 91% of participants reported symptoms of anxiety; of these, 25% reported severe anxiety and 66% reported mild to moderate anxiety.

Epping-Jordan et al. (1999) also measured psychological distress among breast cancer patients. Their sample consisted of 80 women with Stage I, Stage II, Stage III, and Stage IV breast cancer. Anxiety was measured at diagnosis, three months post-diagnosis, and six months post diagnosis using the Symptom Checklist-90-Revised (SCL-90R: Derogatis, 1983). Results indicated that 40% of their sample reported clinically significant levels of anxiety at baseline. At three months post-diagnosis, 17.5% reported clinically significant levels of anxiety. At six months post-diagnosis, 21% reported clinically significant levels of anxiety. A limitation of this study, as noted earlier, is that the stage of the cancer was not taken into consideration as all participants were collapsed into one group.

Bender et al. (2005) later examined the prevalence of psychological and emotional symptoms in breast cancer patients in a cross-sectional study. Their sample included 40 women diagnosed with Stage I and Stage II breast cancer who had received primary surgical treatment but who had not begun adjuvant treatment and 87 women diagnosed with Stage I, II, and III breast cancer who had recently completed adjuvant

treatment. Anxiety was measured using the Profile of Mood States (POMS; McNair et al., 1971). Among the two groups, 80% and 74%, respectively, reported feeling anxious or nervous. Therefore, although estimates of the prevalence rates of anxiety among breast cancer patients vary, it seems apparent that the diagnosis of cancer tends to occasion anxiety among the majority of participants. Further, for breast cancer patients, the emotional difficulties of depression and anxiety often are accompanied by existential and spiritual concerns.

Existential Concerns

It is widely acknowledged that existential concerns often arise in response to a life-threatening illness (Johnson, 2003; Yalom, 1980). This phenomenon holds true for those who have been diagnosed with breast cancer and face the possibility of death (Knobf, 2007; Shapiro et al., 2001; Spiegel, 1990; Spiegel and Kimerling, 2001; Weisman & Worden, 1976). Such a diagnosis threatens the illusion of invulnerability and evokes many fears, including fears of death and dying. For many people, this is their first psychological and emotional contact with their own mortality (Spiegel). In one study, for example, 41% of women with non-metastatic breast cancer reported fear of death as a significant source of stress (Compas et al., 2006). This new and acute awareness of mortality often triggers what has been referred to as an *existential plight* (Weisman & Worden). Once assumed stability and security are called into question, long-held life goals may no longer seem attainable, and patients struggle to incorporate these changes in reality into their ways of thinking (Pargament, 2007). In response to these existential challenges, some patients experience personal growth and a greater appreciation for the

joys of life whereas others experience feelings of hopelessness, helplessness, isolation, and a sense of meaninglessness (Weisman & Worden).

One of the most common existential concerns experienced by breast cancer patients is an awareness of the lack of personal control (Cole and Pargament, 1999). These women report feeling helpless and unable to control even the smallest aspects of their daily existence (Cole and Pargament). Also, they may experience concerns about having to depend upon others and fears that they will become a burden to their loved ones (Johnson, 2003). This experience of physical helplessness and the sense of lacking control over one's life often exacerbate fears of death and dying (Spiegel, 1990).

Another common existential concern experienced by breast cancer patients is the re-examination of identity and self-worth (Cole & Pargament, 1999). The physical effects of breast cancer and its treatment often result in a decrease in a woman's physical strength and stamina. In turn, these changes alter and restrict the various life roles that these women were accustomed to filling prior to their illness (Cole & Pargament). Further, breast cancer and its treatment produce radical changes in a woman's physical appearance. Often, these changes have detrimental effects on a woman's sense of her own femininity. These losses of health, strength, life roles, appearance, and sense of femininity often leave women with the challenge of re-establishing their sense of identity and self-worth (Cole & Pargement).

A related and equally common existential concern for breast cancer patients is a sense of absolute aloneness (Spiegel, 1990). Frequently, relationships that were experienced as strong and supportive become tenuous and distant following a diagnosis

of breast cancer (Cole & Pargament, 1999). This is perplexing for breast cancer patients and may trigger feelings of abandonment (Cole & Pargament). Further, these changes in social support come at a time when these women are already struggling to feel as if they belong in response to their new roles and sense of altered identity. This sense of aloneness may, in fact, exacerbate death anxiety for some women (Spiegel).

A final existential concern of breast cancer patients, and one that can be seen as a response to the challenges discussed above, is a desire to understand the meaning of the illness and of life (Speigel, 1993). Specifically, breast cancer patients often search for an explanation to the questions "Why me?" (Edser & May, 2007; Spiegel), "What's the meaning of pain and suffering?" and "What's the meaning of life?" (Cole and Pargament, 1999). Often, these questions are spiritual in nature and may bring about a re-evaluation of one's spiritual perspective and relationship with one's Higher Power (Cole, 2005; Cole and Pargament).

Spirituality

Spirituality has become a topic of importance and interest in the field of counseling with both researchers and clinicians calling for its empirical examination and inclusion in the counseling process (Cashwell & Young, 2005; Frame, 2003; Hinterkopf, 1994; Ingersoll, 1994; Miller, 1999; Morgan, 2007; Myers et al., 2000). The significance of this interest among counselors is illustrated by the development and adoption of the nine spirituality competencies for counselors (Miller) developed by the Association for Spiritual, Ethical, and Religious Values in Counseling (ASERVIC) and endorsed by the American Counseling Association. Whereas this interest in spirituality has grown

recently among counselors, it has been long-held by the majority of American citizens. Researchers (Gallup, 2008) reported that 78% of Americans report that they believe in God and an additional 15% report belief in a universal spirit. This means that 93% of Americans express belief in a force greater than themselves. Further, 78% of Americans believe in an afterlife (Harley & Firebaugh, 1993) and many consider their spiritual beliefs and practices to be a source of renewal, strength, and comfort and as central to their identity (Miller).

It is important to note that while spirituality certainly is related to religion, it remains a distinct phenomenon with distinct defining characteristics (Cashwell & Young, 2005; Chandler, Holden, & Kolander, 1992; Frame, 2003; Hinterkopf, 1994; Ingersoll, 1994; Morgan, 2007). Specifically, religion can be described as a set of beliefs and practices that are shared by an organized group and engaged in publicly (Ingersoll) whereas spirituality is more difficult to capture in words but can be described as one's personal journey towards wisdom, love, meaning, hope, peace, connectedness, and compassion (ASERVIC, 1997). Further, spirituality includes the strength of inner resources (Howden, 1992) and is innate to all beings (Chandler, Holden, & Kolander, 1992). Therefore, it is not necessary that a person be religious or even believe in a Higher Power to be spiritual or to experience the benefits of peace and integration that are offered by spirituality (Spira & Reed, 2003).

Considering the potentially life-enriching benefits of spirituality, its importance to the majority of Americans, and its infusion throughout all aspects of life, it comes as no surprise that there has been a surge of interest in the topic in both society and the field of

counseling. Researchers and practitioners now acknowledge the importance of spirituality in the lives of clients. More specifically, researchers have begun to examine the specific ways in which spirituality contributes to overall well-being.

Spirituality as Important to Overall / Emotional Well-Being

Myers et al. (2000) placed spirituality at the very core of the Wheel of Wellness, their holistic model for overall health and wellness. They proposed that the spiritual component of well-being is an essential aspect of healthy living and one that has potential to enhance counseling interventions. Similarly, Chandler et al. (1992) asserted that in order to experience the highest degree of well-being, spirituality must be infused throughout the emotional, intellectual, physical, social, and occupational aspects of life. This infusion supports the integration of spirituality in a holistic sense, which seems important to overall health and well-being (Chandler et al.). More specifically, Cloninger (2007) argued that spirituality contributes to the prevention of unhealthy behaviors and therefore serves as a buffer against the development of medical disorders. Others have proposed that spirituality contributes to healthy interpersonal relationships (Hodges, 2002; Ingersoll, 1994), meaning and purpose (Hinterkopf, 1994; Ingersoll), and one's ability to engage in play (Ingersoll).

Further, several authors have written about the relationship between spirituality and emotional well-being (Briggs & Shoffner, 2006; Cloninger, 2007; Hinterkopf, 1994; Hodges, 2002; Miller, 1999; Morgan, 2007; Pargament, Murray-Swank, & Tarakeshwar, 2005; Young et al., 2000). For example, Pargament et al. offered an empirically-based rationale for including spirituality in the counseling process. Specifically, they argued

that spirituality assists in improving emotional and psychological health. Hinterkopf (1994) specified that spirituality contributes to emotional health by fostering emotional and psychological growth. In fact, Hinterkopf (1994) argued that spiritual experiences result in the emotional and psychological growth that may be essential for overall personal development. Further, spirituality contributes to emotional well-being by providing a means of positive coping (Hodges, 2002) that may lead to a sense of peace (Hinterkopf, 1994). Despite this growing consensus that spirituality contributes to overall and emotional well-being, little empirical exploration of the topic has been performed (Wise, 2001).

Although there is a dearth of empirical investigation of the effects of spirituality on overall and emotional well-being, the evidence that does exist on this topic indicates that spirituality enhances overall well-being (Miller & Thoresen, 1999) and emotional well-being (Pargament, 2007). These relationships hold true in both cross-sectional and longitudinal studies (Miller & Thoresen, 1999). Additionally, the positive effects of spirituality on overall and emotional well-being have been indicated among a variety of samples.

For example, spirituality appears to bolster the emotional well-being among those who are already struggling with emotional problems. Lindgren and Coursey (1995) interviewed 30 participants who had been diagnosed with a mental health disorder and who were receiving mental health treatment at one of three mental health centers. Among these participants, 83% reported that their spiritual beliefs were beneficial to their mental

health. The participants further specified that their spiritual beliefs were a source of comfort and peace that reminded them that they were not alone.

Additionally, spirituality seems to buffer the effects of stressful life experiences among non-clinical populations. Lee and Waters (2003) investigated the relationship among stressful life experiences, spiritual well-being, and trauma symptoms. Participants were 61 adult college students ranging in age from 17-55 who completed the Life Events Questionnaire-Short Form (Pearlman, 1996), the Trauma Symptom Checklist (Briere, & Runtz, 1989), and the Spiritual Well-Being Scale (Paloutzian & Ellis, 1982). Results indicated that spirituality was significantly associated with decreased trauma symptoms (t = -2.18, p = .03) and suggested that spirituality can serve as a buffer to the symptoms of trauma associated with life stressors. In a similar study, Fabricatore, Handal, and Fenzel (2000) examined the effect of spirituality on emotional well-being and its ability to moderate the effects of stressors on emotional well-being. Participants were 120 undergraduate students who completed the Undergraduate Stress Questionnaire (Crandall, Preisler, & Aussprung, 1992), the Spiritual Involvement Scale (Fenzel, 1996), the Satisfaction with Life Scale, (Diener, Emmons, Larsen, & Griffin, 1985), and the Depression-Happiness Scale (McGreal & Joseph, 1993). Results indicated that spirituality significantly added to the prediction of emotional well-being (R^2 change = .07, F = 10.07, p = .002). In each of these correlational studies, results suggested that spirituality is related to emotional well-being and that this relationship remains true during difficult times in life.

Similar conclusions can be drawn from the results of experimental studies. Edmondson et al. (2005) conducted a study to investigate whether spirituality buffers the negative emotional and physical effects of betrayal. Participants were 52 female undergraduate students who were asked to complete the Spiritual Well-Being Scale (Paloutzian & Ellison, 1982), the Satisfaction with Life Scale (Diener et al., 1985), and the Cohen-Hoberman Physical Symptoms Checklist (Cohen & Hoberman, 1983). Participants were later interviewed and asked to recall a time when they had been betrayed by a parent or primary caregiver. During this interview, participants' blood pressure and heart rate were measured. Participants who indicated higher levels of spirituality self-reported fewer physical health symptoms (r = -.22), greater life satisfaction (r = .65, p < .01), and lower levels of stress (r = -.47, p < .01). Additionally, these participants experienced lower heart rates in response to the recall of betrayal when compared to participants who reported lower levels of spirituality. Therefore, results suggest that spirituality enhanced participants' subjective experiences of overall and emotional well-being and was associated with lower levels of emotional and physical reactivity as demonstrated by objective measures. A substantive limitation of this study, however, was the use of retrospective recall of betrayal.

Wachholtz and Pargament (2005) obtained similar results in a study in which they examined the benefits of spiritual meditation. Participants were 68 undergraduate students who were randomly assigned to either a spiritual meditation group (n = 25), a secular meditation group (n = 21), or a non-meditation relaxation group (n = 22). Participants in each group were trained in how to implement their assigned practice and

were asked to practice their technique 20 minutes per day for two weeks. Those in the spiritual meditation group were asked to meditate on their choice of one of four spiritually focused phrases whereas those in the secular meditation group were asked to meditate on one of their choice of four secular phrases. The non-meditation relaxation group was instructed to implement relaxation techniques but not instructed on how to occupy their minds during their relaxation time. Participants completed the Positive and Negative Affect Scale (Watson, Clark, & Tellegen, 1988), the State-Trait Anxiety Inventory (Spielberger, 1983), and the Spiritual Well-Being Scale (Paloutzian & Ellison, 1982) both before and after the two week implementation period. No differences existed across groups before the two week implementation period. At the completion of the two week implementation period, all participants were asked to submerge their hands in a container of ice cold water and were instructed to withdraw their hands from the water when the pain was no longer bearable. As a group, participants in the spiritual meditation group kept their hands in the cold water for an average of over 90 seconds—twice as long as the average of those in the other two groups. In addition, the participants in the spiritual meditation group reported significantly lower levels of anxiety ($F = 4.62$, $p < .01$), a greater decline in anxiety over the two implementation weeks, and significantly higher levels of positive mood ($r = .42$, $p < .01$) than those in the secular meditation group and the non-meditation relaxation group. These results are striking and suggest that the practice of spirituality has the ability to enhance the already documented emotional and physical benefits of meditation and relaxation. Further, spirituality may increase one's ability to cope with both physical and emotional pain and provide comfort during

times of crisis (Pargament, 2007). Given the evidence that spirituality supports and enhances both overall and emotional well-being during difficult times, it comes as no surprise that spirituality is of great importance to breast cancer patients.

Spirituality and Breast Cancer

Many people struggle to redefine their relationship with their Higher Power in response to pain and suffering (Pargament, 2007). The diagnosis of a serious illness can be traumatic and has the potential to challenge spiritual and religious beliefs, potentially triggering a period of uncertainty as people attempt to integrate their current reality into their pre-existing beliefs and values (Fitchett et al., 2004; Pargament). Often, the first attempt at coping with these challenges is to cling to spiritual beliefs. This can be done through spiritual meaning-making that fits with one's pre-existing spiritual schema and by utilizing familiar sources of spiritual support and connection (Pargament).

At other times, one's spiritual beliefs may require reappraisal in order for the person to be able to place the traumatic event of a life-threatening diagnosis in a more benevolent context. This approach may help to preserve one's sense of hope, meaning, and comfort in the face of pain, suffering, and uncertainty (Pargament, 2007). In cases where the experience of illness cannot be integrated or assimilated into one's existing spiritual beliefs and when one is unsuccessful at reappraising those spiritual beliefs in such a way that allows those beliefs to remain relevant and sensitive to that person's needs, a sense of loss of or separation from one's Higher Power may be experienced (Pargament). Such a loss has been linked to sadness and depression (Pargament) and was recently associated with increased levels of depressive symptoms and emotional distress

in a sample of cancer patients (Fitchett et al., 2004). Clearly, then, it seems important that breast cancer patients are able to maintain those spiritual beliefs that sustain them (Cole & Pargament, 1999).

Cole and Pargament (1999) discussed the importance of spirituality in resolving the existential and spiritual concerns often experienced by breast cancer patients. Cole (2005) further argued that for those who consider themselves to be spiritual individuals, existential and spiritual concerns are best addressed from a spiritual perspective. Specifically, one's spirituality provides the possibility of peace in the midst of the realization that one lacks control, may re-affirm one's identity and sense of self-worth, has the potential to ease feelings of isolation and enhance relationships, and offers a way to make meaning of the illness and the suffering it brings (Cole & Pargament).

Researchers indicate that spiritual beliefs, experiences, and practices help people cope with and make meaning of life threatening illnesses (Albaugh, 2003; Pargament, 2007). When faced with a life-threatening diagnosis, many seek support from their Higher Power through faith, prayer, meditation, rituals, worship, and the reading of sacred texts (Pargament). Spiritual beliefs, experiences, and practices provide those in pain and crisis with comfort and empowerment (Albaugh; Pargament), the strength to face a life-threatening illness, and the feeling of being blessed despite the struggles of the illness (Albaugh). Additionally, it has been argued that spirituality may be especially important among cancer patients given the commonality of existential and spiritual concerns among this population (Cole & Pargament, 1999).

Whereas some authors have argued that spirituality is important to breast cancer patients, (Knobf, 2007; Spira & Reed, 2003), very few researchers have examined this relationship empirically (Puig et al., 2006; Romero et al., 2006). Among researchers who have addressed this topic, it has been established that spirituality is important to breast cancer patients during the diagnostic process (Logan, Hackbusch-Pinto, & De Grasse, 2006) and when these women have completed treatment and are cancer free (Helgeson & Tomich, 2005; Meraviglia, 2006; Perkins et al., 2007).

For example, Romero et al. (2006) assessed the relationship between spirituality and both emotional well-being and quality of life among 81 women who had been diagnosed with breast cancer and had completed treatment. Participants' stage of breast cancer was not reported, type of treatment received varied, and time since diagnosis varied with an average of over two years since diagnosis. Whereas participants' emotional well-being and quality of life were measured with multi-item assessments with good psychometrics, spirituality was measured with a single item: "How spiritual/religious do you consider yourself?" to which participants responded by rating themselves on a likert-type scale ranging from 1 (*not at all*) to 5 (*very much*). By the researchers' own admission, this item is not likely to have captured a full and accurate picture of participants' spirituality. Nonetheless, results indicated that spirituality was negatively associated with mood disturbance ($r = -.34$, $p < .01$) and positively associated with quality of life ($r = .81$, $p < .001$). In a similar study, Cotton et al. (1999) examined the relationship among spirituality, quality of life, and emotional well-being among breast cancer patients. Participants were 142 women with a mean time since diagnosis of

14 months and included women diagnosed with non-metastatic breast cancer and women diagnosed with metastatic breast cancer. The researchers did not report on whether participants were receiving treatment or not. Results of bivariate correlations indicated that spirituality was positively associated with quality of life ($r = .48$, $p < .001$) and negatively associated with feelings of hopelessness ($r = -.55$, $p < .001$); results of a hierarchical regression analysis, however, indicated that spirituality added very little variance to quality of life after controlling for demographic variables and psychological and emotional wellness (R^2 change = .03). The researchers interpret these results by suggesting that the relationship among the variables of spirituality, quality of life, and emotional well-being may be more complex and indirect than previously recognized. Whereas these two studies provide information about the relationship of spirituality and emotional well-being among breast cancer patients, they do not address specifically other factors that might impact the relationship between spirituality and emotional well-being. Further, the relationship between spirituality and emotional well-being among those breast cancer patients who are currently receiving treatment has not been addressed.

In fact, there is limited research that addresses the importance of spirituality to breast cancer patients who are currently in treatment. Targ and Levine (2002) conducted a study to evaluate and compare the effectiveness of two breast cancer support groups. Participants were 181 women with both non-metastatic breast cancer and metastatic breast cancer. Some participants were currently in treatment while others had already completed treatment and the time since diagnosis varied among participants. Participants were randomly assigned to one of two 12-week programs. The first program incorporated

complementary and alternative medicine (CAM) interventions whereas the second program incorporated cognitive-behavioral interventions. The CAM group interventions incorporated spiritual practices with dance and movement, experiential activities, meditation, guided imagery, and a focus on existential matters. At the completion of the 12-week programs, participants completed questionnaires measuring quality of life (the Functional Assessment of Chronic Illness Therapy, Version 4 scale; Cella, 1997), mood (the Profile of Mood States; McNair et al., 1971), and spiritual well-being (the Spiritual Scale of the Functional Assessment of Chronic Illness Therapy, Version 4 scale; Cella; the Principles of Living Survey; Thoresen, Bowman, Koopman, Yang, & Spiegel, 1997). Results indicated that both intervention groups were associated with improved quality of life ($t = 2.72$, $p < .008$ for CAM group), decreased depression ($t = 3.01$, p = .004 for CAM group), decreased anxiety ($t = 3.82$, $p = .0003$ for CAM group), and increased spiritual well-being ($t = 3.18$, $p = .002$ for CAM group). Differences between the two groups were few but significant. Participants in the CAM group reported significantly higher program satisfaction ($F = 7.78$, $p = .006$) and had half the drop-out rate compared to the cognitive-behavioral support-group. Additionally, the participants in the CAM group reported higher levels of spiritual integration than did those in the cognitive-behavioral group ($F = 8.09$, $p = .005$).

Whereas these studies inform our understanding of the importance of spirituality among breast cancer patients, the collective limitations must be considered. For example, in two of the studies reviewed above, samples included both participants who had been diagnosed with non-metastatic breast cancer (Stages I-III) and participants who had been

diagnosed with metastatic breast cancer (Stage IV) despite research that indicates that these two populations face different challenges, have distinct needs, and experience different levels of distress. Additionally, one of the studies reviewed above (Romero et al., 2006) did not specify the stage of participants' breast cancer diagnosis. Compas et al. (1999) argued that the stage of breast cancer is a potentially confounding variable and should be controlled for when studying breast cancer patients. Also, in a study of 225 breast cancer patients diagnosed with varying stages of disease progression, Hanson Frost et al. (2000) found that women with Stage IV breast cancer reported higher concerns about their physical health and functioning, social functioning, and overall impact of the disease on their lives. Similarly, all of the studies reviewed above combined participants who varied in time since diagnosis and in their phase of treatment (in treatment versus post-treatment) and failed to take these issues into consideration or control for them statistically. Because researchers have found that these groups have different needs and report different levels of distress (Hanson Frost et al.), this aspect of the research design calls the veracity of the findings into question. Further, only one of these studies included participants who were currently receiving treatment. Given the distressing emotional effects of breast cancer treatment, it seems important to examine spirituality among breast cancer patients as they are undergoing treatment. Another limitation found in one of the studies reviewed above was the measurement of spirituality with one question. Given the complex nature of spirituality and the inherent difficulties of assessing such an ethereal construct, it is likely that this item failed to capture participants' spirituality and may have impacted the results of the study. Finally, whereas the results of these studies

indicate that spirituality is positively associated with emotional well-being in breast cancer patients, none of these studies examined other factors, such as alexithymia and mindfulness, which may impact spirituality and, therefore, may not have obtained a complete picture of spirituality among breast cancer patients.

Spirituality and Anxiety

Researchers indicate that the majority of women with breast cancer experience distressing symptoms of anxiety (Epping-Jordan et al., 1999; Hughes, 1982). Further, these women report that the experience of anxiety exacerbates the burden of breast cancer (Bender et al., 2005). It has been suggested that spirituality is an important resource to breast cancer patients and one that supports overall emotional well-being in this population (Albaugh, 2003; Cotton et al., 1999; Helgeson & Tomich, 2005; Logan et al., 2006; Meraviglia, 2006; Romero et al., 2006; Targ & Levine, 2002). Given the research indicating that spirituality serves to buffer anxiety (Young et al., 2000), it is possible that spirituality may serve to buffer the deleterious effects of anxiety among breast cancer patients.

Anxiety can be described as the absence of peace. Peace is a critical component of spirituality and an experience often supported by one's spiritual life. Given this description, the relationship between spirituality and anxiety seems natural. Young et al. (2000) examined the capacity of one's spirituality to buffer anxiety created by negative life experiences among a sample of 303 undergraduate students. Results suggested that one's spirituality significantly moderates the anxiety-producing effects of negative life experiences (R^2 change = .04, $F = 11.22$, $p < .05$). Considering the existential challenges

faced by breast cancer patients and their need for comfort, it is expected that this relationship will be even stronger among a sample of breast cancer patients.

Spirituality and Depression

Similar to anxiety, researchers indicate that depression is widely experienced among breast cancer patients (Badger et al., 2007; Bender et al., 2005; Epping-Jordan et al., 1999; Fann et al., 2008; Hughes, 1982; Tercyak et al., 2007). In fact, feelings of depression are considered to be a critical emotional component of the breast cancer experience (Rabinowitz, 2002). Badger et al. (2004) found that 28% of women in treatment for breast cancer reported that depression was one of the most problematic and disturbing aspects of their breast cancer experience even in comparison to the physical side effects of their treatment, and there appears to be some consensus that approximately one-third of breast cancer patients will experience clinical levels of depression (Badger et al., 2007; Epping-Jordan et al.; Tercyak et al.), with even more experiencing levels of depression at the sub-clinical level (Bender et al.). Clearly, then, depression is a vital and troubling aspect of breast cancer. Given the research that has demonstrated the importance of spirituality to the overall emotional well-being of breast cancer patients and the role of spirituality in buffering depression among non-medical samples, it seems plausible that spirituality buffers depression among breast cancer patients.

Researchers have begun to examine the relationship between spirituality and depression and have found that the two are negatively correlated (Westgate, 1996). Young et al. (2000) examined the capacity of spirituality to buffer depression created by negative life experiences among undergraduate students. Spirituality and depression were

significantly and negatively correlated (r = -.14, p < .05). Additionally, spirituality buffered the depression-producing effects of negative life experiences (R^2 change = .07, F = 25.94, p < .05). In another study, Briggs and Shoffner (2006) examined the relationship between spiritual wellness and depression among a sample of older adolescents and midlife adults. Spirituality was significantly and negatively correlated with depression in both older adolescents (r = -.32, p < .01) and midlife adults (r = -.52, p < .01); however, the relationship was stronger among midlife adults. The results from both of these studies indicate a strong and consistent inverse relationship between spirituality and depression. Given the empirical evidence supporting to the role of spirituality in ameliorating symptoms of depression among non-medical populations, especially among midlife adults, and the importance of spirituality to breast cancer patients, the examination of the role of spirituality in predicting depression among breast cancer patients seems warranted.

Alexithymia

Alexithymia is defined as the restriction of emotions and can manifest as difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking (Bagby et al., 1994). It has been estimated that approximately 10% of the general population experience alexithymia (Mantani et al., 2007) with higher percentages found among clinical populations (Taylor, Bagby, & Parker, 1997).

Alexithymia and Overall / Emotional Well-Being

Several authors have argued that alexithymia has detrimental effects on overall well-being. Emotional restriction requires the expenditure of emotional, psychological,

and physical energy (Pennebaker, 1997). This expense of energy can become a drain on the strength of the body and its defenses. In this way, alexithymia can weaken the body's immune system, exacerbate stress on the heart and vascular system, and affect the biochemical reactions of the nervous system (Pennebaker). These negative physical impacts have the ability to exacerbate, contribute to, or even bring about physical illness (Pennebaker).

The acknowledgement, acceptance, and expression of emotions can have powerful short- and long-term health benefits (Pennebaker, 1997). Emotions are an important aspect of human life. They provide us with information that is essential to the successful navigation of daily activities, important decisions, personal and professional relationships, and overall goal attainment. With the awareness, acceptance, and expression of these emotions, we have the opportunity to experience increased insight, understanding, and knowledge related to ourselves, others, and the world we inhabit (Pennebaker). Additionally, discussing negative emotions and events can result in increased social support in the form of attention, sympathy, empathy, practical assistance, comfort, and displayed affection (Pennebaker). Finally, expressing the emotions associated with a negative event provides one with an opportunity to "come to terms" with these experiences and to heal (Pennebaker).

In one seminal study, Pennebaker, Kiecolt-Glaser, and Glaser (1988) examined the effects of emotional expression on physical health. Participants were 50 female and male undergraduate students who completed questionnaires, had their blood pressure measured, and gave a blood sample prior to being randomly assigned to either a trauma

condition or a no-trauma condition. Participants in the trauma condition were asked to write about their deepest thoughts and feelings associated with the most traumatic experiences of their lives for 20 minutes on four consecutive days. Participants in the no-trauma condition were asked to write about a neutral assigned topic for 20 minutes on four consecutive days and were specifically asked to avoid including their own thoughts or feelings. Immediately before and after the four day writing period, participants completed questionnaires that assessed their mood and physical symptoms, had their blood pressure taken, and gave blood samples. All of these assessments were repeated at three and six months following the completion of the four day writing period to assess the duration of effects. Results indicated that at the completion of the four day writing period, participants in the trauma condition experienced significantly higher immune system response than those in the no trauma condition ($F_{(2, 80)} = 3.36$, $p < .05$). For the six months following the four day writing period, the trauma group made significantly fewer visits to the university health center than the no trauma group ($F_{(1, 48)} = 4.20$, $p < .05$). Furthermore, among the participants in the trauma group, those whose writings expressed more feelings experienced a significantly greater decline in blood pressure than those whose writings expressed fewer feelings (t (44) = 3.42, $p < .05$). All of these results provide support for the argument that the acknowledgement and expression of emotions benefits physical health and immune functioning. Regarding emotional well-being, participants in the trauma group reported significantly higher levels of happiness than participants in the no trauma group for up to three months after the completion of the final writing period (t (42) = 2.09, $p < .05$). Overall, results suggest that expressing

emotions related to traumatic events improved participants' immune functioning, bolstered their physical health, and increased their feelings of happiness.

The detrimental effects of alexithymia are not limited, however, to those of a physical nature. Alexithymia is believed to also have a negative effect on emotional and psychological well-being. It is considered to be a risk factor for emotional distress, psychological problems, and mental health diagnoses (Mantani et al., 2007). Specifically, alexithymia has been associated with low self-esteem (Yelsma, 1995), a limited capacity for experiencing positive emotions (Spiegel, 1999), sleep disturbances such as insomnia and nightmares (Bauermann, Parker, & Taylor, 2008), self-mutilation (Lambert & de Man, 2007), neuroticism (Luminet, Bagby, Wagner, Taylor, Graeme, & Parker, 1999), low social support, a decreased ability to cope with stress (Fukunishi & Rahe, 1995), anxiety, and depression (Hendryx, Haviland, & Shaw, 1991). Further, alexithymia not only increases the chances of experiencing these negative emotional and psychological effects, but decreases the benefits that can come from emotional awareness.

Recently, Cashwell et al. (in press) examined the relationship of alexithymia to both anxiety and depression. Participants were 339 undergraduate and graduate students who were asked to complete the Center for Epidemiologic Studies Short Depression Scale (Andresen et al., 1994), the Toronto Alexithymia Scale-20 (Bagby et al., 1994), and the Trimodal Anxiety Questionnaire (Lehrer & Woolfolk, 1982), among other instruments. Results indicated that alexithymia was positively and significantly associated with both anxiety (r = .38) and depression (r = .46) in this sample. In addition, alexithymia was the single greatest predictor of anxiety, accounting for 21% of the

variance in anxiety in the multivariate equation, and the second greatest predictor of depression. These results suggest that those who experience the chronic restriction of emotions are more likely to experience symptoms of anxiety and depression.

One limitation of the Pennebaker et al. (1988) and Cashwell et al. (in press) studies is that they both used college-student samples with no identified health problems. If physical and emotional benefits are experienced in response to emotional expression by members of the general population, it seems likely that these benefits also would be experienced by breast cancer patients, a group that struggles with especially painful emotions that may be difficult to acknowledge, describe and express. Additionally, if anxiety and depression are more likely to be experienced by university students who experience alexithymia, it also seems likely that breast cancer patients, who commonly struggle with anxiety and depression, may experience the same negative effects of alexithymia. Given the data on alexithymia, it is not surprising that it is a condition that is problematic among breast cancer patients.

Alexithymia and Breast Cancer

Authors have suggested that alexithymia may be included in the negative emotional effects of breast cancer (Puig et al., 2006) and it has been estimated that approximately 36% of breast cancer patients experience alexithymia (Manna et al., 2007). This estimate is more than three times as high as the estimate given for the prevalence of alexithymia among the general population. As with the general population, emotional restriction among breast cancer patients can restrict interpersonal intimacy within their families and entire social support network (Spiegel & Kimerling, 2001). This limitation

of intimacy further restricts the benefits of social support that may be experienced through the expression of affection, encouragement, and concern. If a woman with breast cancer is unable to identify, describe, and express her emotions to others, she may miss out on the comfort that would be extended to her by others in response to those emotions (Spiegel & Kimerling). Given the essential nature of social support to women diagnosed with breast cancer (Keitel & Kopala, 2000; Spiegel, 1993; Spira & Reed, 2003; Stanton, 2003), this negative effect of alexithymia has the potential to be especially damaging to breast cancer patients' emotional and overall well-being (Spiegel & Kimerling).

In addition to the restriction of social support, alexithymic breast cancer patients also experience negative intrapersonal effects. For example, breast cancer survivors who talked less about their illness and attempted to use avoidance to cope with the emotional and physical demands of their illness reported higher levels of depression than those who were able to openly discuss the illness and its effects (Cordova et al., 2001). Similarly, in a longitudinal randomized control study, breast cancer patients who wrote about the struggles of the breast cancer experience experienced significant improvements in both quality of life and depression (Craft, 2007).

Further, Classen, Koopman, Angell, and Spiegel (1996) also investigated the relationship between emotional expression and emotional distress in breast cancer patients. Participants were 101 women who had been diagnosed with metastatic (Stage IV) breast cancer. Emotional expression was assessed with the Courtauld Emotional Control Scale (Watson & Greer, 1983) and emotional distress was assessed with the Profile of Mood States (McNair et al., 1971). Results were statistically significant and

suggested that the restriction of emotions was associated with increased emotional distress ($t = 3.48$, $p < .001$). Similarly, Luminet, Rokbani, Ogez, and Jadoulle (2007) examined alexithymia, anxiety, and depression among breast cancer patients. Participants were 122 Belgian women who had been diagnosed with and were receiving treatment for non-metastatic breast cancer; the specific disease stage of the participants was not reported. Participants completed the Toronto Alexithymia Scale (Bagby et al., 1994) and the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) the day before receiving surgical treatment and six months later. Results indicated that alexithymia was significantly and positively correlated with anxiety on the day before surgery ($r = .18$, $p < .05$) and six months later ($r = .31$, $p < .001$). Similarly, alexithymia was significantly and positively correlated with depression on the day before surgery ($r = .32$, $p < .001$) and six months later ($r = .62$, $p < .001$).

In a similar study, Mantani et al. (2007) examined the relationship between alexithymia and anxiety among breast cancer patients in a cross-sectional study. Participants were 46 Japanese women who had been diagnosed with either Stage I or Stage II breast cancer and who had received surgical treatment three months prior to the study. Participants completed the Japanese version of the Zung Self-rating Anxiety Scale (Zung, 1971) and the twenty-item Toronto Alexithymia Scale (Bagby et al., 1994). Results indicated that alexithymia was positively and significantly associated with anxiety among this sample of breast cancer patients ($r = .204$, $p < .05$) and accounted for 12.6% of the variance in anxiety scores.

Finally, Lieberman (2007) investigated the relationship between insightful emotional disclosure and the overall well-being of breast cancer patients. Participants were 77 women with breast cancer (Stage I-Stage IV); treatment phase of participants was not specified. All of these women were part of an online breast cancer support network. Participants' level of insightful emotional disclosure was measured using a computer-based text analysis and overall well-being was assessed with the Functional Assessment of Cancer Therapy-Breast (Cella, Tulsky, & Gray, 1993). Results indicated that insightful emotional disclosure was positive and significantly related to both functional well-being ($r^2 = .05$, $F < .05$) and decreased breast cancer concerns ($r^2 = .07$, $F < .01$), although the modest magnitude of the effects in this study suggests that the findings may have limited clinical significance.

The results of these studies seem especially pertinent when one considers the benefits of emotional expression that are unavailable to alexithymic breast cancer patients. Emotional expression is a critical component of the emotional and overall well-being of breast cancer patients (Spiegel & Kimerling, 2001) and has the potential to contribute to insight and perspectives that are believed to assist with coping among breast cancer patients (Compas et al., 1999).

Alexithymia and Spirituality

In addition to other aspects of well-being, emotional expression supports spiritual growth by contributing to the factors of spirituality—interconnectedness, purpose and meaning in life, inner strength, and transcendence. Emotional expression enhances interconnectedness by increasing social support, empathy, and connection with others

(Rime, 1999). It contributes to purpose and meaning by helping breast cancer patients make sense of their suffering and to experience hope (Compas et al., 1999; Spiegel & Kimerling, 2001). It strengthens inner resources by facilitating empowerment and a sense of peace. Finally, emotional expression is important to spirituality whereas using spirituality to avoid or bypass emotions is unhealthy (Cashwell et al., 2004).

Despite these connections, very few authors have written about the important relationship between alexithymia and spirituality. Among those who have, however, there is a consensus that true and health-promoting spirituality includes emotional well-being (Cashwell et al., 2007; Cashwell et al., 2000; Lesser, 1999; Welwood, 1983; Welwood, 2000). The restriction of emotions limits the possibility of emotional, cognitive, and spiritual growth. Because we are whole beings, each aspect of our health affects the others (Myers et al., 2000). Spiritual development does not occur in a vacuum but in conjunction with emotional and interpersonal development (Cashwell et al., in press). For these reasons, we must be able to recognize, acknowledge, describe, express, and accept our emotions in order to fully experience spiritual growth and to receive the full benefits of the spiritual journey. Researchers have found support for these arguments.

For example, Cashwell et al. (in press) examined the relationship between alexithymia and spirituality. Participants were 339 undergraduate and graduate students who were asked to complete the Toronto Alexithymia Scale-20 (Bagby et al., 1994), and the Spiritual Assessment Scale (Howden, 1992), among other instruments. Results indicated that alexithymia was negatively and significantly associated with each of the four components of spirituality--*Purpose and Meaning in Life* ($r = -.43$, $p < .01$),

Innerness and Inner Resources (r = -.33, p < .01), *Unifying Interconnectedness* (r = -.36, p < .01), and *Transcendence* (r = -.27, p < .01). These results provide evidence for the relationship between emotional expression and spirituality among a university sample. It is expected that similar results might be obtained among a sample of breast cancer patients.

Mindfulness

Mindfulness is an ancient spiritual practice that has only recently begun to receive attention in the literature of counseling and other health-related fields (Krasner, 2004). It has been practiced for centuries by the followers of many spiritual traditions as part of the quest for spiritual growth (Lesser, 1999). Mindfulness can be defined as awareness and is manifested by observing (an observant awareness of present moment experience), describing (applying words to the observed present moment experience), acting with awareness (choosing actions consciously based on present moment awareness), nonjudging (observing present moment experience without labeling it as "good" or "bad", and nonreacting (the capacity to be in the present-moment experience and respond consciously rather than unconsciously reacting to external stimuli) (Baer et al., 2006). Also, it can be described as being fully awake at a psychological and spiritual level (Hanh, 1975) or as nonjudgmental awareness of one's present reality, regardless of the circumstances (Krasner). Mindfulness is available in all that we do and can be practiced while breathing, listening to the sound of someone's voice, feeling the touch of a loved one's hand, and in any number of ways (Bartlett, 2000). It is giving full attention to the

present moment and the task at hand (Hanh). It requires that we live in the present, eschewing the regrets of the past and the anxieties of the future.

A common way to practice mindfulness is to simply focus on the rise and fall of one's breath. As the mind wanders from this focus on the breath, one acknowledges the wandering without judgment, interpretation, or reaction, and with compassion, returns attention to the breath (Hanh, 1975; Lesser, 1999). With this practice may come increased patience, compassion, peace, calm focus, and the ability to live fully in each moment.

Mindfulness and Overall / Emotional Well-Being

The benefits of practicing mindfulness are characteristic of overall and emotional well-being. Researchers have begun to report results that demonstrate this relationship between mindfulness and well-being among a variety of populations. One group that seems to benefit from mindfulness includes those who suffer from anxiety and depression.

Kabat-Zinn et al. (1992) examined the relationship between mindfulness and anxiety and depression among 22 participants who had been diagnosed with generalized anxiety disorder, panic disorder without agoraphobia, or panic disorder with agoraphobia. Participants attended weekly two-hour sessions of a mindfulness-based stress reduction (MBSR) program for eight weeks and one seven and a half hour retreat. Each of these sessions included the practice of mindfulness, meditation, and group discussion. Prior to and following the mindfulness intervention, participants completed the Hamilton Rating Scale for Anxiety (Hamilton, 1959), the Hamilton Rating Scale for Depression (Williams, 1988), and the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh,

1961). These assessments also were completed three months following the intervention to assess result maintenance. Results of repeated measures ANOVA indicated that participants experienced significant decreases in both anxiety and depression over the course of the mindfulness intervention and that these decreases were maintained during the three months following the completion of the intervention. The changes in anxiety were observed on the Hamilton Rating Scale for Anxiety ($F = 21.1$, $p < .001$). The changes in depression were observed on both the Hamilton Rating Scale for Depression ($F = 8.87$, $p < .001$) and the Beck Depression Inventory ($F = 9.96$, $p < .001$). In a follow-up study conducted three years later, results indicated that these decreases in anxiety ($F = 13.22$, $p < .001$) and depression ($F = 13.63$, $p < .001$) from pre-test scores remained stable among participants (Miller, Fletcher, & Kabat-Zinn, 1995). The results of these two studies suggest that the practice of mindfulness is effective for the reduction of both anxiety and depression.

Further evidence of the relationship between mindfulness and depression was obtained by Teasdale et al. (2000). These researchers examined the effect of mindfulness on preventing depression relapse among those diagnosed with recurrent major depression. Participants were 145 Welsh men and women who had been diagnosed with recurrent major depression but who had not experienced symptoms of depression within the past 12 weeks. Participants were randomly assigned to one of two treatment groups, standard talk therapy for depression or mindfulness-based cognitive therapy (MBCT). Those in the treatment as usual group were instructed to seek treatment as they normally would if they experienced recurrent symptoms of depression. Participants in this group

utilized the services of psychiatrists and counselors. Those in the MBCT group attended weekly two-hour sessions for a duration of eight weeks. During these sessions, participants were taught to become more aware of, and relate differently to their thoughts, feelings, and bodily sensations. Results indicated that those in the MBCT group experienced significantly fewer relapses of depression than those in the treatment as usual group ($p < .01$). This appears to offer further evidence that the practice of mindfulness is effective in reducing the symptoms of those struggling with emotional difficulties such as anxiety and depression.

Similarly, positive effects of mindfulness have been obtained among participants who were struggling with both emotional distress and medical symptoms. Carmody, Reed, Kristeller, and Merriam (2008) examined the relationship between mindfulness and both emotional distress and reported medical symptoms among 44 participants who had been referred to a mindfulness-based stress reduction program by their physicians. Participants completed an eight-week mindfulness intervention that consisted of weekly two-hour sessions during which mindfulness was cultivated through meditation and group discussion. Prior to and following the eight-week mindfulness intervention, participants completed the Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale (Peterman, Fitchett, Brady, Hernandez, & Cella, 2002), the Medical Symptom Checklist (Kabat-Zinn, 1982), and the Hopkins Symptom Checklist 90-Revised (Derogatis, 1983). At the completion of the mindfulness program, participants demonstrated significant decreases in mean scores of anxiety (-50%), depression (-43.20%), and reported medical symptoms (-27.64%).

Reibel, Greeson, Brainard, and Rosenzweig (2001) also examined the effects of mindfulness on health related quality of life and physical and emotional distress. Participants were 136 men and women who had been diagnosed with a variety of medical illnesses. Participants completed the Short-Form Health Survey (Ware & Sherbourne, 1992), the Medical Symptom Checklist (Kabat-Zinn, 1982), and the Symptom Checklist-90 Revised (Derogatis, 1983) before and after an eight-week mindfulness-based stress reduction program. During the eight-week intervention, participants met for weekly, two and a half hour group sessions and one 6 hour session. During these sessions, participants were taught and practiced a variety of mindfulness activities such as body scans, awareness of breath, yoga, eating and walking meditations, and guided imagery. Each meeting included the practice of mindfulness and group discussion. In addition, participants were asked to practice mindfulness for 20 minutes a day in their own homes. Results indicated a significant reduction in participants' overall psychological distress ($t = 7.10$, $p < .0001$), anxiety ($t = 6.47$, $p < .0001$), depression ($t = 6.25$, $p < .0001$), and somatization ($t = 4.84$, $p < .0001$). In addition, participants experienced a significant decline in self-reported medical symptoms ($t = 6.46$, $p < .0001$) and an increase in overall physical ($t = 2.65$, $p < .01$) and mental ($t = 6.05$, $p < .0001$) functioning. The results of these two studies provide evidence for the positive relationship between mindfulness and overall and emotional well-being among those living with physical illness.

Even more relevant for the current study, similar results have been obtained among cancer patients. Garland et al. (2007) compared the effectiveness of a mindfulness-based stress reduction program (MBSR) to that of a healing arts program on

measures of spirituality, anxiety, anger, overall stress symptoms, and mood disturbance. Participants were 104 cancer patients (approximately 55% were breast cancer patients) who self-selected to participate in either the MBSR program (n = 60) or the healing arts program (n = 44). The MBSR program was an eight-week intervention that guided participants to become more aware of themselves, their thoughts, and their bodies through discussion, meditation, and yoga. Participants met for weekly 90-minute sessions and one three-hour silent retreat. In addition, participants were encouraged to practice aspects of MBSR at home for 45 minutes each day. The healing arts program was a six-week intervention that guided participants toward self-discovery and empowerment by using dance, journaling, creative writing, and drawing. Participants met weekly for two-hour sessions. In addition, participants were given homework and a booklet with exercises, poetry, and theory about the program to utilize at home. Participants of both groups completed a questionnaire packet prior to and following the intervention; instruments included the Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being scale (Peterman et al., 2002), the Profile of Mood States (McNair et al., 1971), and the Symptoms of Stress Inventory (Leckie & Thompson, 1979). Independent t tests or chi-squared analysis were employed to compare between groups baseline data; no significant differences were found between groups regarding age, gender, marital status, education, duration of illness, or psychological measures. Post intervention results indicated that participants in the MBSR program showed more improvement than participants in the healing arts program on measures of spirituality (F = 4.881, p = .029),

anxiety ($F = 4.419$, $p = .038$), anger ($F = 8.893$, $p = .004$), overall stress symptoms ($F = 4.277$, $p = .041$), and mood disturbance ($F = 5.30$, $p = .023$).

Likewise, cancer patients who participated in a qualitative study described mindfulness as a powerful way of accepting their illness in a manner that provided comfort, meaning, and direction in a time of intense fear and anxiety (Mackenzie, Carlson, Munoz, & Speca, 2007). Taken together, the results of the studies described in this section provide support for the argument that mindfulness produces emotional and physical benefits among those who are already struggling with emotional and physical pain, including cancer patients. Given the anxiety, depression, and physical challenges experienced by breast cancer patients, it seems plausible that mindfulness would be effective among that population as well (Carlson, Speca, Patel, & Goodey, 2004).

Mindfulness and Breast Cancer

Indeed, researchers have recently begun to investigate the benefits of mindfulness among breast cancer patients. Carlson et al. (2004) examined the relationship between the practice of mindfulness and the quality of life and symptoms of stress among cancer patients. Participants were 59 Canadian breast cancer patients and 10 Canadian prostate cancer patients. All participants had been diagnosed with non-metastatic cancer and had completed treatment at least three months prior to the commencement of this study. Participants completed a mindfulness-based stress reduction program that incorporated relaxation, meditation, gentle yoga, and daily home practice. Participants also completed the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (Aaronson et al., 1991) and the Symptoms of Stress Inventory (Leckie &

Thompson, 1979) prior to and following the eight-week mindfulness-based stress reduction program. Results indicated that participants experienced a significant increase in quality of life (t = -2.23, p < .05) and a significant decrease in symptoms of stress (t = 3.23, p < .01). Further, these results were maintained over a follow-up period of one year (Carlson, Speca, Faris, & Patel, 2007).

In a similar study, Tacon et al. (2004) examined the effects of a mindfulness-based stress reduction program on stress, anxiety, mental adjustment to cancer, and health locus of control. Participants were 27 women diagnosed with breast cancer. Time since diagnosis ranged from one to five years and participants were diagnosed with both non-metastatic and metastatic breast cancer. Participants completed the State-Trait Anxiety Inventory (Spielberger, 1983), the Mental Adjustment to Cancer Scale (Watson et al., 1988), the Multidimensional Health Locus of Control Scale (Wallston, Wallston, & DeVellis, 1978) and responded to a single item rating of their current level of stress on a 10-point scale both prior to and following the eight-week mindfulness-based stress reduction program. The eight-week program consisted of weekly sessions lasting one hour during which participants were taught and practiced body scans, sitting mindfulness meditation, and yoga. Additionally, participants were encouraged to practice mindfulness daily in their own homes. Results indicated that participants experienced a significant reduction in reported levels of stress (t = 7.54, p < .001), anxiety (t = 4.95, p < .001), anxious preoccupation (t = 2.54, p < .01), and helplessness/hopelessness (t = 2.66, p < .01) following the mindfulness program. In addition, participants reported a significant increase in internal locus of control (t = 2.30, p < .05) following the completion of the

mindfulness program. The researchers of this study concluded that the practice of mindfulness is effective for improving the quality of life of breast cancer patients.

Finally, Witek-Janusek et al. (2008) employed a non-randomized controlled design to evaluate the effect of a mindfulness-based stress reduction (MBSR) program on immune functioning and quality of life. Participants were 66 women diagnosed with non-metastatic breast cancer who had received surgical treatment. Participants self-selected into either the MBSR group or an assessment only group. Those in the MBSR group completed an eight-week program designed to increase mindfulness and well-being. During this program, participants met once a week for two and half hour sessions and for one full day session. Participants were taught and practiced mindfulness through breath awareness, sitting and walking meditation, and mindful yoga. Prior to and following the eight-week program, participants of both groups completed the Quality of Life Index Cancer Version III (Ferrans, 1990) and the Jalowiec Coping Scale (Jalowiec, 1993). In addition, participants provided blood samples both prior to and following the MBSR program for the assessment of immune functioning. Pre-intervention or baseline tests revealed no significant differences between groups. Following the completion of the MBSR program, participants in the MBSR group had significantly higher levels of immune functioning than those in the control group as evidenced by higher levels of their Natural Killer Cell Activity ($p = .002$). It is important to note that the immune functioning of the women who completed the MBSR program exceeded that of women who were cancer-free at the completion of the intervention. In addition, participants of the MBSR program reported significantly higher quality of life post-intervention than

those in the control group even though no between groups differences existed at baseline ($F = 5.582$, $p < .05$). The researchers of this study reported evidence that participation in a mindfulness-based stress reduction program can improve the immune functioning and quality of life of breast cancer patients. Altogether, the results of these three studies provide support for the positive relationship between mindfulness and overall well-being among breast cancer patients.

Mindfulness and Spirituality

The relationship of mindfulness to the well-being of breast cancer patients may be better understood in the context of spirituality. The fact that mindfulness facilitates greater compassion, patience, and acceptance makes it a promising practice for those who are enduring the emotional and physical suffering of breast cancer. These same characteristics of mindfulness make it particularly useful to those who seek spiritual growth as well. In fact, mindfulness and spirituality have several aspects that complement one another such that the practice of one seems to contribute to the growth of the other. More specifically, mindfulness may facilitate the experience of the factors of spirituality.

For example, one of the factors of spirituality is innerness or inner resources (Howden, 1992). Innerness can be described as serenity in times of life's uncertainty and peace with one's self and world (Howden). Mindfulness assists us in the cultivation of each of these qualities (Mackenzie et al., 2007). An essential aspect of the practice of mindfulness is the acceptance of the thoughts that arise and break the focus on the breath. Instead of fighting against the presence of those thoughts, one is encouraged to acknowledge their presence without judgment or interpretation before returning focus to

the breath (Hahn, 1975; Lesser, 1999). Those thoughts are simply part of one's present reality, much as the pain of treatment may be part of the present reality of a breast cancer patient (Tacon et al., 2004). Practicing this acceptance with mindfulness may help breast cancer patients move towards a peaceful acceptance of their present reality (Bartlett, 2000; Mackenzie et al.).

A second factor of spirituality is purpose and meaning in life (Howden, 1992). Purpose and meaning in life can be described as the process of searching for or discovering events or relationships that provide a sense of worth, hope, or reason for living (Howden). Researchers have found that mindfulness is associated with increased hope among cancer patients (Garland et al., 2007). Further, the practice of mindfulness is directly connected to purpose and meaning in life because of its focus on living each moment fully (Hahn, 1975). Researchers provide evidence of this relationship with participants reporting an increased sense of purpose and meaning in life as a result of the practice of mindfulness (Fredrickson, Cohn, Coffey, Peck, & Finkel, 2008).

Unifying interconnectedness is another factor of spirituality and can be described as a feeling of harmony with self and relatedness to others, and a feeling of oneness with the universe or one's Higher Power (Howden, 1992). Mindfulness facilitates this sense of connection and harmony with self, others, and the world by strengthening self-awareness and compassion. The practice of accepting each moment as it is may be extended into the practice of accepting ourselves as we are and thus facilitate harmony with self. Also, by living in the present and fully experiencing each moment without judgment, as the practice of mindfulness encourages, we are able to maximize our time with and

connection to others. When in the company of another person, we are often distracted by our thoughts and external distractions. If we focus our full attention on the person we are with, however, we will be fully awake and fully connected to that person, maximizing our relationships (Hahn, 1975).

Finally, healthy spirituality includes an ability to remain present in and connected to experiences, even those that are painful (Cashwell et al., in press). At times, when experiencing painful life circumstances, people desire a psychological and emotional escape. This type of escape, or spiritual bypass, may prevent development and exacerbate psychological distress and is not associated with a genuine spiritual path (Cashwell et al.). Alternatively, the practice of mindfulness has been associated with an increased capacity to remain present, to tolerate physical discomfort (Carmody et al., 2008; Reibel et al., 2001) and emotional pain (Garland et al., 2007; Kabat-Zinn et al., 1992; Teasdale et al., 2000), and thus, likely contributes to a healthy spirituality.

The relationship between mindfulness and spirituality is supported by research. For example, Garland et al. (2007) reported a significant increase in participants' spirituality scores following the completion of a mindfulness-based stress reduction program ($F = 4.881$, $p = .029$). Finally, cancer patients who participated in a qualitative study specified that the practice of mindfulness increased their recognition of themselves as spiritual beings, contributed to their spiritual growth, and increased their sense of gratefulness (Mackenzie et al., 2007). As these results suggest, the practice of mindfulness facilitates spirituality which further enhances mindfulness in an ongoing and reciprocal relationship. In addition, both the practice of mindfulness and spirituality have

been associated with increased overall and emotional well-being among breast cancer patients.

Summary

In this chapter, a review of the literature related to the experience of breast cancer has been provided. Specifically, theory and research pertaining to the anxiety, depression, spirituality, alexithymia, and mindfulness experiences of breast cancer patients has been presented and critiqued. In summary, the following has been highlighted: 1) the psychological and emotional effects of breast cancer increase both the emotional and physical burden of breast cancer, 2) spirituality appears to buffer the anxiety and depression often associated with negative life events, 3) empirical research on spirituality among breast cancer patients is limited, focused on the diagnosis and post-treatment phases, indiscriminant in its combination of participants diagnosed with non-metastatic and metastatic breast cancer despite research that indicates that these two populations are distinct, and lacks examination of the complex nature of spirituality, 4) alexithymia may exacerbate the negative emotional effects of breast cancer and limit the positive effects of spirituality, but these relationships need further empirical exploration, and 5) mindfulness may support emotional well-being among breast cancer patients as well as a healthy spiritual life, but these relationships need further empirical exploration. The proposed study seeks to fill these gaps by focusing on spirituality among non-metastatic breast cancer patients who are currently in treatment and by examining spirituality in a broader context of well-being by including the components of alexithymia and mindfulness. Specifically, alexithymia and mindfulness will be explored as potential moderators of the

relationships between spirituality and both anxiety and depression among breast cancer patients.

CHAPTER III

METHODOLOGY

In Chapters I and II, the rationale and need for the study of the effect of spirituality on anxiety and depression among breast cancer patients as moderated by alexithymia and mindfulness were established. The review of the literature in Chapter II demonstrated the need for further study of the importance of spirituality among breast cancer patients and the potential relevance of the proposed moderators. This chapter includes a detailed description of the methodology for the current study including hypotheses, participants, instrumentation, procedures, data analysis, limitations, and changes to the full study based on the pilot study.

Research Questions and Hypotheses

The five research questions of this study were introduced in Chapter I. These questions address the relationships among spirituality, anxiety, and depression among breast cancer patients, as well as the extent to which alexithymia and mindfulness moderate these relationships. The following are the specific research questions and corresponding hypotheses for this study.

Research Question 1: What are the relationships among spirituality, alexithymia, mindfulness, anxiety, and depression for women with Stage I, Stage II, and Stage III breast cancer?

Hypothesis 1: Negative correlations will be found between spirituality and alexithymia, spirituality and anxiety, spirituality and depression, alexithymia and mindfulness, mindfulness and anxiety, and mindfulness and depression while positive correlations will be found between spirituality and mindfulness, alexithymia and anxiety, alexithymia and depression, and anxiety and depression among women with Stage I, Stage II, and Stage III breast cancer.

Research Question 2: How do alexithymia and mindfulness moderate the relationship between spirituality as a predictor variable and anxiety as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer?

Hypothesis 2a: Alexithymia will moderate the relationship between spirituality and anxiety such that higher alexithymia will weaken the relationship between spirituality and anxiety.

Hypothesis 2b: Mindfulness will moderate the relationship between spirituality and anxiety such that higher mindfulness scores will strengthen the relationship between spirituality and anxiety.

Research Question 3: How do alexithymia and mindfulness moderate the relationship between spirituality as a predictor variable and depression as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer?

Hypothesis 3a: Alexithymia will moderate the relationship between spirituality and depression such that higher alexithymia will weaken the relationship between spirituality and depression.

Hypothesis 3b: Mindfulness will moderate the relationship between spirituality and depression such that higher mindfulness scores will strengthen the relationship between spirituality and depression.

Research Question 4: After controlling for the effects of spirituality, alexithymia, and mindfulness on anxiety, how do demographics such as age, parental status, relationship status, stage of breast cancer, type of surgical treatment received, and family's history of cancer further predict anxiety among women with Stage I, Stage II, and Stage III breast cancer?

Hypothesis 4: Demographic factors will account for additional variance in anxiety among women with Stage I, Stage II, and Stage III breast cancer beyond what is accounted for by spirituality, alexithymia, and mindfulness.

Research Question 5: After controlling for the effects of spirituality, alexithymia, and mindfulness on depression, how do demographics such as age, parental status, relationship status, stage of breast cancer, type of surgical treatment received, and family's history of cancer further predict depression among women with Stage I, Stage II, and Stage III breast cancer?

Hypothesis 5: Demographic factors will account for additional variance in depression among women with Stage I, Stage II, and Stage III breast cancer beyond what is accounted for by spirituality, alexithymia, and mindfulness.

Participants

Participants were recruited from a Cancer Services center in the Southeast United States. Female Cancer Services clients who were diagnosed with Stage I, Stage II, and

Stage III breast cancer and who had received surgical treatment for breast cancer within the past year or who were currently receiving radiation, chemotherapy, hormone therapy, or biological therapy were invited to participate. Based on an a priori power analysis using G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007), a minimum of 55 participants were needed for adequate power (.80) in order to obtain a moderate effect size (.25) for the multiple regression analyses with five predictors. Based on this power analysis, the target sample size was 55 women.

Instrumentation

Participants completed one packet of instruments that included the Spirituality Assessment Scale (Howden, 1992), the Toronto Alexithymia Scale – 20 (Bagby et al., 1994a; Bagby et al., 1994b) the Five Factor Mindfulness Questionnaire (Baer et al., 2006), the Trimodal Anxiety Questionnaire (Lehrer & Woolfolk, 1982), the Center for Epidemiologic Studies Short Depression Scale (Andresen et al., 1994), and a brief demographic questionnaire. The order of the first five instruments was randomized to avoid possible ordering effects and, given the compromised health conditions of participants, to address the possibility of participant fatigue; however, the demographic questionnaire was always the final instrument in the packet. Below, the psychometric properties of each instrument are described. Documentation of permission to use the Spirituality Assessment Scale (Howden), the Toronto Alexithymia Scale – 20 (Bagby et al.), the Five Facet Mindfulness Questionnaire (Baer et al.), and the Center for Epidemiologic Studies Short Depression Scale (Andresen et al.) are included in Appendix C.

Demographics Questionnaire

A questionnaire created by this researcher was distributed to all participants to obtain demographic information including age, parental status, relationship status, date of diagnosis, stage of breast cancer, date of surgical treatment, type of surgical treatment received, prior history of cancer, and family history of breast cancer. A copy of the demographic questionnaire is included in Appendix C.

Spirituality Assessment Scale

Spirituality was measured using the Spirituality Assessment Scale (SAS; Howden, 1992, Appendix C). Howden compiled the items for this instrument after a review of the literature on spirituality from the fields of philosophy, psychology, sociology, theology, and nursing; therefore, the instrument has a sound theoretical base (Stanard, Sandhu, & Painter, 2000). The SAS consists of 28 self-report items that measure spirituality as manifested by the four constructs of *purpose and meaning*, *innerness and inner resources*, *unifying interconnectedness*, and *transcendence*. SAS items are scored using a 6-point likert-type scale response format ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The instrument is scored by summing the responses for all items within a subscale; for a total score, each of the subscale scores is summed (Howden). The unit of analysis for the current study was the total scale, a global measure of spirituality. Total scores can range from 28 to 168; higher mean scores represent higher levels of spirituality. The SAS was normed on a sample of adult men and women between the ages of 40 and 60 and Howden (1992) reported high full-scale internal consistency with a Cronbach's alpha of 0.91 and good internal consistencies for each of the four subscales:

purpose and meaning (*a* = 0.91), *innerness and inner resources* (a = 0.79), *unifying interconnectedness* (a = 0.80), and *transcendence* (a = 0.71).

Validity of the instrument was addressed using principal component factor analysis with varimax rotation that confirmed the theoretical model (Howden, 1992). Factor loadings of 0.4 or greater on a minimum of three items for a factor were required for support of a factor and inclusion of its items in the assessment (Howden). If an item loaded on more than one factor, the factor with the highest loading was selected (Howden). The Kaiser-Guttman standard of an eigenvalue greater than 1.0 was utilized to decide upon the number of factors for interpretation (Howden). Additionally, the instrument demonstrates high face validity (Stanard et al., 2000).

Toronto Alexithymia Scale – 20

Alexithymia was measured using the Toronto Alexithymia Scale - 20 (TAS-20; Bagby et al., 1994a; Bagby et al., 1994b, Appendix C). The TAS – 20 consists of 20 self-report items that measure the inability to express emotions with three subscales: *difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking*. The instrument is scored using a 5-point likert-type-scale response format ranging from 1 (*not at all like me*) to 5 (*completely like me*); total scores range from 20 to 100, with higher mean scores indicating increased difficulty expressing emotions. The unit of analysis for the current study was the total scale, a global measure of alexithymia. The TAS-20 was normed on a sample of adult men and women with a mean age of 35 and Bagby et al. (1994a) reported acceptable internal consistency with a Cronbach's alpha of 0.81 for the total scale score and 0.78, 0.75, and 0.66 for the respective subscales. A second study by

Bagby et al. (1994b) demonstrated strong support for both convergent and concurrent validity of the TAS – 20, face validity, and modest support for its discriminant validity.

Five Facet Mindfulness Questionnaire

Mindfulness was measured using the Five Factor Mindfulness Questionnaire (FFMQ; Baer et al., 2006, Appendix C). The FFMQ consists of 39 self-report items that measure five facets of mindfulness with five subscales: *observing* (noticing a variety of stimuli), *describing* (applying words to observation), *acting with awareness* (giving full attention to one's present activity), *nonjudging* (avoiding the evaluation of observations), and *nonreacting* (noticing without reacting). The FFMQ is scored with a 5-point-Likert-type-scale response format ranging from 1 (*never or very rarely true*) to 5 (*very often or always true*) and provides a total mindfulness score indicating a global measure of mindfulness. This total score was the unit of analysis for the current study.

The FFMQ was normed on a sample of male and female undergraduate students and Baer et al. (2006) reported that this instrument measures distinct aspects of mindfulness. Further, Baer et al. performed an exploratory factor analysis; results indicated that the five-factor model of the FFMQ was a good fit and accounted for 33% of the variance using factor extraction. Then, Baer et al. performed a confirmatory factor analysis and concluded that the five-factor model was a good fit for the data. Also, strong internal consistency was reported with a Cronbach's alpha of 0.96 for the total scale score, 0.83 for the *observing* subscale, 0.91 for the *describing* subscale, 0.87 for the *acting with awareness* subscale, 0.87 for the *nonjudging* subscale, and 0.75 for the *nonreacting* subscale (Baer et al.).

Trimodal Anxiety Questionnaire

Anxiety was measured using the Trimodal Anxiety Questionnaire (TAQ; Lehrer & Woolfolk, 1982, Appendix C). The TAQ consists of 36 self-report items that measure three aspects of anxiety: *somatic*, *behavioral*, and *cognitive* (Scholing & Emmelkamp, 1992). The TAQ is scored with a 9-point likert-type scale response format ranging from 0 (*never*) to 8 (*extremely often*). Total scores can range from 0 to 288 with higher mean scores indicating higher levels of anxiety. The unit of analysis for the current study was the total scale, a global measure of anxiety.

Results of a confirmatory factor analysis supported the three factor model of the TAQ in a sample of individuals with social phobia, a sample of non-clinical adults, and a sample of non- clinical adolescents (Scholing & Emmelkamp, 1992). Additionally, both convergent and divergent validity of the factors were assessed using correlational analyses and determined to be satisfactory (Scholing & Emmelkamp). Also, discriminant analyses were conducted and results indicated that the TAQ was able to distinguish between adults diagnosed with social phobia and adults who were of a non-clinical population (Scholing & Emmelkamp). The TAQ was normed on a sample of undergraduate students, a mixed clinical and community sample, and a sample of individuals with social phobia. Scholing and Emmelkamp reported strong internal consistency for each subscale of the TAQ with a Cronbach's alpha score of 0.87 for the *somatic* factor, 0.87 for the *behavioral* factor, and 0.83 for the *cognitive* factor. No alpha score was reported, however, for the total scale score.

Center for Epidemiologic Studies Short Depression Scale

Depression was measured using the Center for Epidemiologic Studies Short Depression Scale (CES-D10; Andresen et al., 1994, Appendix C). The CES-D10 consists of 10 items that ask respondents to rate how often they have experienced specific features of depressed mood within the past week using a 4-point likert-type scale response format ranging from 0 (*rarely or none of the time*) to 3 (*all of the time*). The instrument is scored by summing all items and scores can range from 0 to 30 with higher scores indicating higher levels of depressed mood. The unit of analysis for the current study was the total scale score, a global measure of depression.

Andresen et al. (1994) reported that this shortened version of the instrument demonstrated good predictive accuracy when compared to the full-length 20-item version of the CES-D (kappa = 0.97, $p < .001$). Further, and as expected, the CES-D10 was positively correlated with poor health status (r = .37) and negatively correlated with positive affect (r = -.63). In addition, a test-retest correlation was performed with 12 months between administrations and scores were determined to be stable with a correlation of r = .59 (Andresen et al.).

Procedures

After obtaining approval for the study from the Institutional Review Board (IRB), the researcher contacted the Wellness Director at a Cancer Services center in the Southeast to initiate recruitment of participants. The researcher delivered research packets in pre-stamped envelopes to the Cancer Services center. Next, staff at the Cancer Services center randomly selected 200 names from their database of women diagnosed

with Stage I, Stage II, and Stage III breast cancer who had received surgical treatment within the past year or who were currently receiving radiation, chemotherapy, hormone therapy, or biological therapy. To protect participants' privacy, the staff of the Cancer Services center affixed address labels to each pre-stamped research packet that this researcher delivered. Finally, staff of the Cancer Services center mailed the research packets to the 200 randomly selected clients who met the study's criteria.

Each research packet consisted of a flyer advertising the study (Appendix A); a cover letter (Appendix B); a one dollar bill incentive; two copies of the informed consent form (Appendix D); the Spirituality Assessment Scale (Howden, 1992); the Toronto Alexithymia Scale – 20 (Bagby et al., 1994a; Bagby et al., 1994b); the Five Factor Mindfulness Questionnaire (Baer et al., 2006); the Trimodal Anxiety Questionnaire (Lehrer & Woolfolk, 1982); the Center for Epidemiologic Studies Short Depression Scale (Andresen et al., 1994); and a brief demographic questionnaire. The cover letter included a brief description of the study, approximate time required to complete the survey, a description of the incentive offered to participants, instructions related to completion of the informed consent form, and an invitation to contact the researcher with any questions. The informed consent form included a brief description of the study, approximate time required to complete the study, and the potential risks and benefits associated with participation. The informed consent form also specified that participation was voluntary and that agreement to participate could be withdrawn without penalty at any time during the study. To protect privacy, participants were informed that signing the informed consent was optional. Participants were invited to keep one copy of the informed consent

form for their records and to return the other copy, either signed or un-signed, in a pre-stamped, self-addressed envelope to the researcher along with the completed instruments.

Data Analysis

Following the end of the data collection period, all results were entered into SPSS 16.0 for Windows (SPSS Inc., 2007) for data analysis. First, descriptive statistics were run on participant demographics to describe the sample. Next, reliability analyses were run for all variables. Preliminary analyses were then conducted. For example, correlations were conducted to assess the relationships among Stage of Breast Cancer and the study variables to determine if collapsing participants into one group compromised the findings in any way. Finally, data were analyzed to test the research hypotheses. Research question 1 (i.e., What are the relationships among spirituality, alexithymia, mindfulness, anxiety, and depression among women with Stage I, Stage II, and Stage III breast cancer?) was analyzed using a Pearson product moment correlation. This analysis assessed the nature and strength of the bivariate relationships between spirituality and alexithymia, spirituality and mindfulness, spirituality and anxiety, spirituality and depression, alexithymia and mindfulness, alexithymia and anxiety, alexithymia and depression, mindfulness and anxiety, mindfulness and depression, and anxiety and depression.

Research question 2 (i.e., How do alexithymia and mindfulness moderate the relationship between spirituality as a predictor variable and anxiety as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer?) was analyzed using multiple regression with interaction terms. Spirituality served as the predictor variable,

alexithymia and mindfulness served as moderator variables, and anxiety served as the criterion variable for this equation.

Research question 3 (i.e., How do alexithymia and mindfulness moderate the relationship between spirituality as a predictor variable and depression as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer?) was analyzed using multiple regression with interaction terms. Spirituality served as the predictor variable, alexithymia and mindfulness served as moderator variables, and depression served as the criterion variable for this equation.

Research question 4 (i.e., After controlling for the effects of spirituality, alexithymia, and mindfulness on anxiety, how do demographics such as age, parental status, relationship status, stage of breast cancer, type of surgical treatment received, and family's history of cancer further predict anxiety among women with Stage I, Stage II, and Stage III breast cancer?) was analyzed by first running bivariate correlations between the demographic variables and the criterion variable, anxiety. Then, only those demographic variables that correlated significantly with the criterion variable anxiety were included in the multiple regression. The final multiple regression model established when answering research question 2 was utilized with the demographic variables that significantly correlated with anxiety entered as a second block of predictors. This analysis provided information on the amount of variance in anxiety that can be explained by the specified demographic characteristics after controlling for the effects of spirituality, alexithymia, and mindfulness on the criterion variable.

Research question 5 (i.e., After controlling for the effects of spirituality, alexithymia, and mindfulness on depression, how do demographics such as age, parental status, relationship status, stage of breast cancer, type of surgical treatment received, and family's history of cancer further predict depression among women with Stage I, Stage II, or Stage III breast cancer?) was analyzed by first running bivariate correlations between the demographic variables and the criterion variable, depression. Then, only those demographic variables that correlated significantly with the criterion variable depression were included in the multiple regression. The final multiple regression model established when answering research question 2 was utilized with the demographic variables that significantly correlated with depression entered as a second block of predictors. This analysis provided information on the amount of variance in depression that could be explained by the specified demographic characteristics after controlling for the effects of spirituality, alexithymia, and mindfulness on the criterion variable.

Pilot Study

A pilot study was conducted to field test the instruments and data collection procedures as well as to assess the feasibility of the larger study. Specifically, this pilot study was conducted to determine what, if any, procedural adjustments were needed to strengthen the full study. A complete description of the methodology and results of the pilot study can be found in Appendix E. The following section provides an overview of the feedback provided from dissertation committee members and this feedback has informed the larger study.

Revisions to Full Study Based on Pilot Study

The original plan was to recruit participants from one cancer center with flyers advertising the study. Based on the time required to get a minimal (n = 5) number of participants for the pilot study, it was determined that participants would need to be recruited by mail from a Cancer Services center in the Southeast in order for the necessary number of participants to be obtained in a timely manner. Support was obtained from the Wellness Director at this Cancer Services center. In addition, it was determined that a one-dollar bill incentive would be included in the mailed research packets. Finally, it was decided that an item (*What is the age of your youngest child*) on the demographic questionnaire would be omitted as it asked for data that was not included in the research questions.

CHAPTER IV

RESULTS

The purpose of this study was to examine spirituality among breast cancer patients within a broader context of well-being by investigating the relationship between spirituality and both anxiety and depression as moderated by alexithymia and mindfulness among non-metastatic breast cancer patients. In this chapter, the results of the data analyses are presented. First, sample demographics are provided. Next, preliminary analyses are presented, including reliability analyses of the instruments and descriptive statistics of all study variables. Finally, the results of analyses related to each research hypothesis are provided.

Description of the Sample

Participants were recruited by mail from a Cancer Services center in the Southeast. Staff at the Cancer Services center randomly selected 200 names from their database of women diagnosed with Stage I, Stage II, and Stage III breast cancer who had received surgical treatment within the past year or who were currently receiving radiation, chemotherapy, hormone therapy, or biological therapy. Then, research packets were mailed to the 200 randomly selected clients who met study criteria.

Of the 72 participants who responded, three did not complete the entire survey. Therefore, a total of 69 surveys were included in the data analyses, representing a 34.5%

response rate. Based on power analyses, the minimum number of participants needed for adequate power to detect moderate effect sizes in the main data analyses was 55; therefore, the sample size was sufficient in this regard.

Demographic data was collected, including age, relationship status, parental status, date of diagnosis, stage of breast cancer, date of surgical treatment, type of surgical treatment received, prior history of cancer, and family history of breast cancer (see Appendix C for full demographic questionnaire). Demographics were computed for the total sample and the results are summarized in Tables 1 and 2.

Because the population of this study is women with breast cancer, and because all 200 of the research packets were sent to women with breast cancer, it is not surprising that all respondents were female. The average age of participants was 59.10 (*SD* = 13.46) and ages ranged from 35 to 86. The majority of participants identified themselves as being in a committed romantic relationship (*n* = 43, 62.3%). Fifty-seven participants (82.6%) reported that they had children. Forty-one participants (59.4%) reported a diagnosis of Stage I breast cancer, 20 participants (29%) reported a diagnosis of Stage II breast cancer, and eight participants (11.6%) reported a diagnosis of Stage III breast cancer. On average, it had been just under 8 months (*m* = 7.77; SD = 3.11; range of 0-17) since diagnosis All participants reported receiving surgical treatment for breast cancer within the past year, with an average of just over 6 months (*m* = 6.28; SD = 2.66; range of 2-12) having passed since surgical treatment. The type of surgical treatment received varied, with 32 participants (46.4%) receiving a lumpectomy, 7 participants (10.1%) receiving a partial mastectomy, and 30 participants (43.5%) reported receiving a full

mastectomy. Finally, the majority of participants did not report a family history of breast cancer (n = 51, 73.9%) while 18 participants (26.1%) did report a family history of breast cancer.

TABLE 1

Demographic Description of the Sample (n = 69)

Variable		Mean	*SD*	Range	*n*	%
Age		59.10	13.46	35 - 86	69	
Relationship status	In a relationship				43	62.3%
	Not in a relationship				26	37.7%
Parental status	Has children				57	82.6%
	Does not have children				12	17.4%
Months since diagnosis		7.77	3.11	0 - 17		
	0				1	1.4%
	2				1	1.4%
	3				1	1.4%
	4				6	8.7%
	5				11	15.9%
	6				6	8.7%
	7				5	7.2%
	8				11	15.9%
	9				8	11.6%
	10				5	7.2%
	11				5	7.2%
	12				6	8.7%
	13				1	1.4%
	14				1	1.4%
	17				1	1.4%
Stage of breast cancer	Stage I				41	59.4%
	Stage II				20	29.0%
	Stage III				8	11.6%
Type of surgical treatment	Lumpectomy				32	46.4%
	Partial mastectomy				7	10.1%
	Full mastectomy				30	43.5%
Months since surgery		6.28	2.66	2 - 12		
	2				6	8.7%
	3				4	5.8%
	4				11	15.9%
	5				6	8.7%
	6				9	13.0%
	7				10	14.5%
	8				4	5.8%
	9				9	13.0%
	10				3	4.3%
	11				4	5.8%
	12				1	1.4%
Family history of breast cancer?	Yes				18	26.1%
	No				51	73.9%

Descriptive Statistics

Descriptive statistics were computed on all study instrumentation. Ranges, means, and standard deviations were calculated for all scales administered in the study. These results are provided in Table 2. Also, means and standard deviations obtained in this study were compared to previous norms. The majority of means obtained in this study were comparable to previously established norms. The noteworthy exception to this, however, is that this sample scored almost one full standard deviation below a previously reported mean score on the Five Facet Mindfulness Questionnaire.

TABLE 2
Sample Score Ranges, Means, and Standard Deviations (n = 69)

Instrument	Possible Range	Sample Range	Previous Mean	Sample Mean	Previous *SD*	Sample *SD*
Spirituality Assessment Scale	28 – 168	66 – 167	133.24[a]	138.29	15.36[a]	17.99
Toronto Alexithymia Scale – 20	20 – 100	24 - 83	45.57[b]	49.36	11.35[b]	12.59
Five Facet Mindfulness Questionnaire	39 – 195	59 - 169	127.21[a]	113.43	14.83[a]	17.75
Trimodal Anxiety Questionnaire	0 – 288	12 – 192	87.81[a]	82.74	39.87[a]	48.90
Center for Epidemiologic Studies Short Depression Scale	0 – 30	5 - 26	12.3[c]	12.33	6.0[c]	4.89

a. Cashwell et al. (in press)
b. Parker, Taylor, and Bagby (2003)
c. Steinhauser et al. (2008)

Instrument Reliability

In order to demonstrate evidence of reliability for the current sample, measures of internal consistency were computed for all instruments using Cronbach's alpha coefficients. The coefficients and previously published coefficients for each scale are provided in Table 3. Estimates of internal consistency ranged from .72 to .95, with only one estimate falling below .80. In social science research, the general consensus is that instrument reliability of .70 is adequate, and that instrument reliability of at least .80 is desirable (Heppner, Kivlighan, & Wampold, 1999). Accordingly, all scales met or exceeded acceptable alpha levels for social science research.

TABLE 3
Instrument Scale Reliabilities

Instrument	# of items	α in current sample	α in previous study(ies)
Spirituality Assessment Scale	28	.95	.92
Toronto Alexithymia Scale – 20	20	.87	.81 - .84
Five Facet Mindfulness Questionnaire	39	.87	.88 - .96
Trimodal Anxiety Questionnaire	36	.96	.83 - .94
Center for Epidemiologic Studies Short Depression Scale	10	.72	.71 - .86

Preliminary Analyses

Two preliminary analyses were performed prior to hypothesis testing. For the first preliminary analysis, Stage of breast cancer was correlated with all study variables to determine the viability of collapsing all participants into one group. Stage of Breast

Cancer was significantly correlated with Anxiety (r = .245, p = .042) but with no other study variables. This was addressed in hypothesis testing by including Stage of Breast Cancer as a demographic variable in the regression analysis for Anxiety. A second preliminary analysis was necessitated by a concern that the sample size was inadequate for examining hypotheses four and five for all demographic factors. To reduce the number of demographics that were included in the regression analysis, bivariate correlations were run between all demographic variables and each criterion variable (anxiety and depression). Relationship Status was significantly and negatively correlated with Anxiety (r = -.275, p = .022) and Stage of Breast Cancer was significantly and positively correlated with Anxiety (r = .245, p = .042). Relationship Status also was significantly and negatively correlated with Depression (r = -.281, p = .019). Therefore, Relationship Status and Stage of Breast Cancer were the only demographic variables included in the regression analysis for Anxiety while Relationship Status was the only demographic variable included in the regression analysis for Depression.

Hypothesis Testing

The purpose of this study was to assess spirituality among breast cancer patients within a broader context of well-being by investigating the relationship between spirituality and both anxiety and depression as moderated by alexithymia and mindfulness among non-metastatic breast cancer patients. Five research questions and their corresponding hypotheses were examined. The results of the statistical analyses that were used to assess the hypotheses are provided below.

Research Question 1 / Hypothesis 1

Research Question 1 was designed to assess the relationships among spirituality, alexithymia, mindfulness, anxiety, and depression for women with Stage I, Stage II, and Stage III breast cancer. A Pearson product-moment correlation was used to assess the nature and strength of the relationships among these variables. The results of the Pearson product moment correlation are presented in Table 4. Hypothesis 1 predicted that spirituality would be negatively correlated with alexithymia, anxiety, and depression and positively correlated with mindfulness; that alexithymia would be negatively correlated with mindfulness and positively correlated with anxiety and depression; that mindfulness would be negatively correlated with anxiety and depression; and that anxiety and depression would be positively correlated among women with Stage I, Stage II, and Stage III breast cancer. Consistent with this hypothesis, spirituality was negatively correlated with anxiety ($r = -.33$, $p < .01$) and depression ($r = -.50$, $p < .01$) whereas alexithymia was positively associated with anxiety ($r = .53$, $p < .01$) and depression ($r = .42$, $p < .01$). In addition, and consistent with comorbidity literature, anxiety and depression were positively correlated ($r = .70$, $p < .01$). Inconsistent with this hypothesis, alexithymia was positively correlated with mindfulness ($r = .48$, $p < .01$), mindfulness was positively correlated with anxiety ($r = .42$, $p < .01$) and depression ($r = .41$, $p < .01$), and spirituality was not significantly correlated with either alexithymia ($r = -.12$, $p > .05$) or mindfulness ($r = -.07$, $p > .05$). Given these results, this hypothesis was partially supported.

TABLE 4
Pearson Product-Moment Correlations and Chronbach Alphas (n=69)

	Spirituality	**Alexithymia**	**Mindfulness**	**Anxiety**	**Depression**
Spirituality	**.95**	-.12	-.07	-.33**	-.50**
Alexithymia		**.87**	.48**	.53**	.42**
Mindfulness			**.87**	.42**	.41**
Anxiety				**.96**	.70**
Depression					**.72**

**$p < 0.01$

Research Question 2 / Hypotheses 2a and 2b

Research Question 2 was designed to assess how alexithymia and mindfulness moderate the relationship between spirituality as a predictor variable and anxiety as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer. Hypothesis 2a predicted that alexithymia would moderate the relationship between spirituality and anxiety such that higher alexithymia would weaken the relationship between spirituality and anxiety. Using the Enter method, a multiple regression with interaction terms was conducted to assess this hypothesis. Spirituality was entered as the first block, Alexithymia was entered as the second block, and the interaction term (Spirituality X Alexithymia) was entered as the third block. Spirituality accounted for 11% of the variance in anxiety ($R^2 = .11$, $\beta = -.33$, $t = -2.87$, $p < .01$). With Spirituality already entered as a predictor, Alexithymia accounted for an additional 24% of the variance in anxiety ($R^2 = .35$, R^2 change $= .24$, $\beta = .50$, $t = 4.99$, $p < .01$). With both Spirituality and Alexithymia already entered as predictors, the interaction term (Spirituality X Alexithymia) did not account for a significant amount of variance in

anxiety (R^2 = .39, R^2 change = .04, β = -2.31, t = -1.91, p > .05); therefore, Hypothesis 2a was not supported. These results are presented in Table 5.

TABLE 5
Multiple Regression Analysis (Enter Method): Alexithymia as a Moderator of Spirituality and Anxiety

Variable	R^2	R^2 Change	β	Std. Error	t
Model Summary	**.39**				
Spirituality	.11	.11	-.33	.31	-2.87**
Alexithymia	.35	.24	.50	.39	4.99**
Spirituality X Alexithymia	.39	.04	-2.31	.03	-1.91

**p < 0.01

One of the assumptions for testing a moderating effect is that the primary predictor variable will be strong predictor of the criterion variable. Whereas spirituality did account for a significant amount of the variance in anxiety (11%), it accounted for a relatively small amount of the variance accounted for by the full model (39%). Indeed, although alexithymia was hypothesized to moderate the relationship between spirituality and anxiety, these results indicate that alexithymia was a stronger predictor of anxiety than was spirituality.

Hypothesis 2b predicted that mindfulness would moderate the relationship between spirituality and anxiety such that higher mindfulness scores would strengthen the relationship between spirituality and anxiety. Using the Enter method, a multiple regression with interaction terms was conducted to assess this hypothesis. Spirituality was entered as the first block, Mindfulness was entered as the second block, and the

interaction term (Spirituality X Mindfulness) was entered as the third block. Again, Spirituality accounted for 11% of the variance in anxiety (R^2 = .11, β = -.33, t = -2.87, p < .01). With Spirituality already entered as a predictor, Mindfulness accounted for an additional 16% of the variance in anxiety (R^2 = .27, R^2 change = .16, β = .40, t = 3.77, p < .01). With both Spirituality and Mindfulness already entered as predictors, the interaction term (Spirituality X Mindfulness) did not account for a significant amount of variance in anxiety (R^2 = .27, R^2 change = .00, β = -.21, t = -.12, p > .05); therefore, Hypothesis 2b was not supported. As was the case in Hypothesis 2a, the hypothesized moderator (Mindfulness) was found to be a stronger direct predictor of Anxiety than the hypothesized predictor variable (Spirituality). These results are presented in Table 6.

TABLE 6
Multiple Regression Analysis (Enter Method): Mindfulness as a Moderator of Spirituality and Anxiety

Variable	***R²***	***R²* Change**	**β**	**Std. Error**	***t***
Model Summary	**.27**				
Spirituality	.11	.11	-.33	.31	-2.87**
Mindfulness	.27	.16	.40	.29	3.77**
Spirituality X Mindfulness	.27	.00	-.21	.03	-.12

**p < 0.01

Research Question 3 / Hypotheses 3a and 3b

Research Question 3 was designed to assess how alexithymia and mindfulness moderate the relationship between spirituality and depression among women with Stage I, Stage II, and Stage III breast cancer. Hypothesis 3a predicted that alexithymia would

moderate the relationship between spirituality and depression such that higher alexithymia would weaken the relationship between spirituality and depression. Using the Enter method, a multiple regression with interaction terms was conducted to assess this hypothesis. Spirituality was entered as the first block, Alexithymia was entered as the second block, and the interaction term (Spirituality X Alexithymia) was entered as the third block. Spirituality accounted for 25% of the variance in depression (R^2 = .25, β = -.50, t = -4.72, p < .01). With Spirituality already entered as a predictor, Alexithymia accounted for an additional 13% of the variance in depression (R^2 = .38, R^2 change = .13, β = .37, t = 3.78, p < .01). With both Spirituality and Alexithymia already entered as predictors, the interaction term (Spirituality X Alexithymia) did not account for a significant amount of variance in depression (R^2 = .40, R^2 change = .02, β = -1.52, t = -1.26, p > *.05*); therefore, Hypothesis 3a was not supported. It is important to note, however, that the full model accounted for 40% of the variance in depression, with spirituality accounting for 25% of the variance in Block one and Alexithymia accounting for an additional 13% of the variance in Block two. These results are presented in Table 7.

TABLE 7
Multiple Regression Analysis (Enter Method): Alexithymia as a Moderator of Spirituality and Depression

Variable	R^2	R^2 Change	β	Std. Error	*t*
Model Summary	**.40**				
Spirituality	.25	.25	-.50	.03	-4.72**
Alexithymia	.38	.13	.37	.04	3.78**
Spirituality X Alexithymia	.40	.02	-1.52	.00	-1.26

**$p < 0.01$

Hypothesis 3b predicted that mindfulness would moderate the relationship between spirituality and depression such that higher mindfulness scores would strengthen the relationship between spirituality and depression. Using the Enter method, a multiple regression with interaction terms was conducted to assess this hypothesis. Spirituality was entered as the first block, Mindfulness was entered as the second block, and the interaction term (Spirituality X Mindfulness) was entered as the third block. Spirituality accounted for 25% of the variance in depression ($R^2 = .25$, β = -.50, $t = -4.72$, $p < .01$). With Spirituality already entered as a predictor, Mindfulness accounted for an additional 14% of the variance in depression ($R^2 = .39$, R^2 change = .14, β = .37, $t = 3.88$, $p < .01$). With both Spirituality and Mindfulness already entered as predictors, the interaction term (Spirituality X Mindfulness) did not account for a significant amount of variance in depression ($R^2 = .39$, R^2 change = .00, β = -1.29, $t = -.78$, $p > .05$); therefore, Hypothesis 3b was not supported. It is important to note, however, that the full model accounted for 39% of the variance in depression, with spirituality accounting for 25% of the variance in

Block one and Mindfulness accounting for an additional 14% of the variance in Block two. These results are presented in Table 8.

TABLE 8
Multiple Regression Analysis (Enter Method): Mindfulness as a Moderator of Spirituality and Depression

Variable	R^2	R^2 Change	β	Std. Error	*t*
Model Summary	**.39**				
Spirituality	.25	.25	-.50	.03	-4.72**
Mindfulness	.39	.14	.37	.03	3.88**
Spirituality X Mindfulness	.39	.00	-1.29	.00	-.78

**$p < 0.01$

Research Question 4 / Hypothesis 4

Research Question 4 was originally designed to assess how demographic variables account for variance in anxiety beyond that accounted for by spirituality, alexithymia, and mindfulness among women with Stage I, Stage II, and Stage III breast cancer. Prior to assessing this research question, however, a preliminary bivariate correlation was run between the demographic variables and the predictor variable, anxiety. Then, only those demographic variables that were correlated significantly with the predictor variable, anxiety, were included in this research question. As reported above, Relationship Status (r = -.275, p = .022) and Stage of Breast Cancer (r = .245, p = .042) were significantly correlated with Anxiety. Therefore, Relationship Status and Stage of Breast Cancer were the only demographic variables included in these analyses. Hypothesis 4 predicted that demographic factors would account for additional variance in

anxiety among women with Stage I, Stage II, and Stage III breast cancer beyond what was accounted for by spirituality, alexithymia, and mindfulness. Using the Enter method, two separate multiple regressions were conducted to assess this hypothesis. For the first multiple regression, Spirituality, Alexithymia, and Mindfulness were entered as the first block and Relationship Status was entered as the second block. Together, Spirituality, Alexithymia, and Mindfulness accounted for of 39% of the variance in anxiety. With Spirituality, Alexithymia, and Mindfulness already entered, Relationship Status did not account for a significant amount of variance in anxiety (R^2 = .41, R^2 change = .02, β = -.15, t = -1.52, p > .05). For the second multiple regression, Spirituality, Alexithymia, and Mindfulness were entered as the first block and Stage of Breast Cancer was entered as the second block. With Spirituality, Alexithymia, and Mindfulness already entered, Stage of Breast Cancer accounted for an additional 4% of the variance in anxiety (R^2 = .43, R^2 change = .04, β = .21, t = 2.17, p < .05); therefore, Hypothesis 4 was partially supported. In addition, the full model accounted for a total of 43% of the variance in anxiety. It is important to note, however, that these results should be viewed with caution due to a modest sample size for this type of analysis.

Research Question 5 / Hypothesis 5

Research Question 5 was originally designed to assess how variables further predict depression among women with Stage I, Stage II, and Stage III breast cancer after controlling for the effects of spirituality, alexithymia, and mindfulness. Prior to assessing this research question, however, a preliminary bivariate correlation was run between the demographic variables and the predictor variable, depression. Then, only those

demographic variables that were correlated significantly with the predictor variable, depression, were included in this research question. As reported above, Relationship Status was significantly and negatively correlated with Depression (r = -.281, p = .019). Therefore, Relationship Status was the only demographic variable included in this analysis. Hypothesis 5 predicted that demographic factors would account for additional variance in depression beyond what was accounted for by spirituality, alexithymia, and mindfulness. Using the Enter method, a multiple regression analysis was conducted to assess this hypothesis. Together, Spirituality, Alexithymia, and Mindfulness accounted for 43% of the variance in depression. With Spirituality, Alexithymia, and Mindfulness already entered, Relationship Status did not account for additional variance in depression (R^2 = .46, R^2 change = .03, β = -.16, t = -1.66, p > .05); therefore, Hypothesis 5 was not supported. Despite this, the full model accounted for a total of 46% of the variance in depression. It is important to note, however, that these findings should be viewed with caution because of the limited sample size for this analysis.

Summary

The results of this study were provided in this chapter. First, sample demographics and a description of how the sample was obtained were presented. Next, descriptive statistics of the instrumentation were provided, including ranges, means, and standard deviations for the current sample. Then, reliability coefficients were computed for the current sample and all the instruments used for this study were determined to be reliable with this sample. In addition, preliminary analyses were performed prior to

hypothesis testing. Finally, data analyses for each hypothesis were described and results of these analyses were presented.

Spirituality was negatively correlated with anxiety and depression whereas alexithymia was positively associated with anxiety and depression. Alexithymia was positively correlated with mindfulness and mindfulness was positively correlated with both anxiety and depression. Spirituality, alexithymia, and mindfulness all were significant predictors of anxiety. Together, spirituality and alexithymia accounted for 39% of the variance in anxiety while spirituality and mindfulness accounted for 27% of the variance in anxiety. Neither alexithymia nor mindfulness, however, moderated the relationship between spirituality and anxiety.

Similarly, spirituality, alexithymia, and mindfulness all were significant predictors of depression Together, spirituality and alexithymia accounted for 40% of the variance in depression while spirituality and mindfulness accounted for 39% of the variance in depression. Neither alexithymia nor mindfulness, however, moderated the relationship between spirituality and depression.

After controlling for spirituality, alexithymia, and mindfulness, stage of breast cancer accounted for an additional 4% of the variance in anxiety. Relationship status accounted for no additional variance neither in anxiety nor depression after controlling for spirituality, alexithymia, and mindfulness. Together, spirituality, alexithymia, and mindfulness accounted for 39% of the variance in anxiety and 43% of the variance in depression. In Chapter V, these results and their implications for counseling breast cancer

patients are discussed. Also, study limitations are presented and directions for future studies are proposed.

CHAPTER V

DISCUSSION

In the previous chapter, results of the study investigating the relationship between spirituality and both anxiety and depression as moderated by alexithymia and mindfulness among non-metastatic breast cancer patients were presented. In this chapter, these results are discussed. Also included in this chapter are study limitations, implications for counselors, and suggestions for future research.

Overview

One in every eight women in this country will be diagnosed with breast cancer in her lifetime (American Cancer Society, 2007). This disease and its treatment are associated with physical pain, fatigue (National Cancer Institute, 2008), changes in physical appearance, body image concerns (Boehmke & Dickerson, 2005), social isolation (Spiegel & Kimerling, 2001), anxiety, and depression (Puig et al., 2006). Anxiety and depression appear to be the most common emotional effects of breast cancer and are experienced, at some level, by the majority of breast cancer patients (Bender et al., 2005; Hughes, 1982). Demographic factors such as relationship status (Maggard et al., 2003) and stage of breast cancer (Hanson Frost et al., 2000) may influence the negative emotional effects of breast cancer. Further, researchers have indicated that anxiety and depression further exacerbate the burden of breast cancer (Badger et al., 2004; Bender et al., 2005).

Spirituality is a personal resource that appears to buffer the anxiety and depression often experienced following negative life events (Young et al., 2000). More specifically, researchers have reported that spirituality is associated with hope and positive mood amongst breast cancer patients (Romero et al., 2006). Further, spirituality has been identified as an important aspect of personal wellness (Myers et al., 2000) and is associated with a sense of meaning, inner strength, and connection to others (Howden, 1992) that may support women's ability to cope with breast cancer (Keitel & Kopala, 2000; Spiegel & Kimerling, 2001).

Whereas these results and their implications are promising, it is important to acknowledge that spirituality occurs within a context of overall well-being and approach to life. More specifically, researchers and theorists have begun to emphasize the importance of assessing spirituality within a broader context of personal well-being (Cashwell et al., in press; Cotton et al., 1999). Because spirituality is one of many factors of personal well-being, and because these factors interact with and affect one another (Myers et al., 2000), an accurate assessment of spirituality requires consideration of other elements of emotional well-being.

For example, healthy spirituality implies awareness and acceptance (Cashwell & Rayle, in press; Kornfield, 1993; Pargament et al., 2005). In other words, whereas spirituality often brings comfort during difficult times, it does so through an increased capacity for acceptance, not by providing an escape from reality. Mindfulness is a component of overall well-being that includes this ability to accept *what is* while dwelling *in the moment* (Baer et al., 2006). In previous research, mindfulness has been

associated with decreased depression (Garland et al., 2007) and decreased anxiety (Tacon et al., 2004) among cancer patients. Thus, mindfulness may be an aspect of emotional well-being that is particularly important to consider when examining the spirituality of breast cancer patients.

Without the quality of mindfulness, the ability for awareness is lessened. Awareness is an important aspect of emotional well-being because undesirable emotions, once acknowledged and expressed, can be integrated. Once integrated, these undesirable emotions begin to subside (Cornell, 1990). When alexithymia restricts such acknowledgment and expression, however, emotional growth is negatively impacted (Pennebaker, 1997). Because spirituality interacts with emotions, neglecting emotional well-being by denying or repressing feelings may limit the ameliorative effects of spirituality on anxiety and depression. In fact, in some instances an individual may mis-use spiritual beliefs toward emotional repression (Cashwell, Bentley, & Yarborough; 2007). Further, it has been proposed that alexithymia may be especially unhealthy for breast cancer patients because the energy that is given to the restriction of emotions is needed to cope with the rigors of the disease and its treatment (Spiegel & Kimerling, 2001). Given this information, it seems that alexithymia is important to consider when assessing the spirituality of breast cancer patients.

Surprisingly, very few researchers have examined spirituality among breast cancer patients (Puig et al., 2006; Romero et al., 2006). Further, the majority of the researchers who have examined spirituality within this population have done so during the diagnostic process (Logan et al., 2006) or following the completion of treatment

(Helgeson & Tomich, 2005; Meraviglia, 2006; Perkins et al., 2007). In addition, although mindfulness and alexithymia have been individually examined, the combination of spirituality, alexithymia, and mindfulness has not been examined among a sample of breast cancer patients.

The purpose of this study, then, was to address this gap in the literature by examining spirituality within a broader context of well-being by investigating the relationship between spirituality and both anxiety and depression as moderated by alexithymia and mindfulness among non-metastatic breast cancer patients who are in the treatment phase of their disease. Also, because demographic factors may influence anxiety and depression among breast cancer patients, relationship status and stage of breast cancer were included in the research questions and analyses. Clients of a Cancer Services center in the Southeast who were diagnosed with non-metastatic breast cancer and who had received surgical treatment within the past year or who were currently receiving radiation, chemotherapy, hormone therapy, or biological therapy were invited to complete a mailed survey packet. The survey included the Spirituality Assessment Scale (Howden, 1992); the Toronto Alexithymia Scale – 20 (Bagby et al., 1994a; Bagby et al., 1994b); the Five Facet Mindfulness Questionnaire (Baer et al., 2006); the Trimodal Anxiety Questionnaire (Lehrer & Woolfolk, 1982); the Center for Epidemiologic Studies Short Depression Scale (Andresen et al., 1994); and a brief demographic questionnaire. A total of 69 surveys were used for data analysis.

Several interesting results were obtained from this study. As expected, spirituality was negatively correlated with both anxiety and depression and alexithymia was

positively correlated with both anxiety and depression. Unexpectedly, alexithymia was positively correlated with mindfulness, mindfulness was positively correlated with both anxiety and depression, and spirituality was not significantly correlated with either alexithymia or mindfulness. Also, spirituality, alexithymia, and mindfulness each were predictive of both anxiety and depression and accounted for 39% of the variance in anxiety and 43% of the variance in depression. Neither alexithymia nor mindfulness, however, operated as moderators of the relationship between spirituality and anxiety or between spirituality and depression. Interestingly, in the prediction of anxiety, both alexithymia and mindfulness were stronger predictors than was spirituality. One assumption of a moderating model is that the predictor variable will be a substantive predictor of the criterion variable. Given that the moderator variables were stronger predictors of the criterion variable (anxiety) than was the predictor variable, this assumption was at least partially violated.

Regarding depression, however, spirituality was a stronger predictor than either alexithymia or mindfulness, accounting for 25% of the variance in depression by itself. Although Alexithymia and Mindfulness were found to add significantly to the variance in Depression beyond the variance accounted for by Spirituality, neither were found to significantly moderate the relationship between Spirituality and Depression.

Demographic factors played only a small role in the analyses. Stage of breast cancer accounted for a small amount of the variance in anxiety beyond what was accounted for by spirituality, alexithymia, and mindfulness. A more detailed discussion of these results is provided below.

Discussion of Results

Preliminary Analyses

Two preliminary analyses were performed and each revealed interesting relationships. First, a correlation was run between stage of breast cancer and all other study variables to determine the viability of collapsing all participants into one group. There was a positive relationship between stage of breast cancer and anxiety ($r = .25$, $p < .05$). This suggests that as the severity of the breast cancer diagnosis increases, so does the anxiety of the breast cancer patient. This result is not surprising especially when considering the fact that serious illness can lead to profound questions of meaning, highlight one's powerlessness, and make mortality seem more imminent (Pargament et al., 2005). Further, this finding is consistent with previous research results and with researchers' suggestions that stage of breast cancer is a potentially confounding variable that should be controlled for when studying breast cancer patients (Compas et al., 1999; Hanson Frost et al., 2000). In this study, stage of breast cancer was controlled for by its inclusion as a demographic variable in the regression analysis for anxiety, with the finding that Stage of Breast Cancer did predict an additional 4% of the variance in Anxiety beyond what could be explained by the predictor variables (Spirituality, Alexithymia, and Mindfulness).

The second bivariate correlation revealed that Relationship Status was negatively correlated with anxiety ($r = -.28$, $p < .05$) and depression ($r = -.28$, $p < .05$). This is consistent with previous research results (Maggard et al., 2003) and suggests that breast cancer patients who are in a committed romantic relationship experience less anxiety and

depression than those who are not. These results are especially understandable and poignant when one considers the finding of Oxlad et al. (2008) who reported that un-partnered breast cancer patients who had received surgical treatment feared that they were no longer physically attractive after the loss of one or both breasts and that this would prevent them from experiencing a romantic relationship in the future. Because all of the participants in this study had received surgical treatment for breast cancer within the past year, Oxlad et al.'s finding may provide a partial context for the negative relationship between relationship status and both anxiety and depression.

Research Question 1

Research Question 1 examined the relationships among spirituality, alexithymia, mindfulness, anxiety, and depression. Hypothesis 1 predicted that spirituality would be negatively correlated with alexithymia, anxiety, and depression and positively correlated with mindfulness; that alexithymia would be negatively correlated with mindfulness and positively correlated with anxiety and depression; that mindfulness would be negatively correlated with anxiety and depression; and that anxiety and depression would be positively correlated. As expected, spirituality was negatively correlated with both anxiety ($r = -.33$, $p < .01$) and depression ($r = -.50$, $p < .01$) whereas alexithymia was positively associated with anxiety ($r = .53$, $p < .01$) and depression ($r = .42$, $p < .01$). Also, and consistent with comorbidity literature, anxiety and depression were positively correlated ($r = .70$, $p < .01$). Inconsistent with this hypothesis, alexithymia was positively correlated with mindfulness ($r = .48$, $p < .01$), mindfulness was positively correlated with anxiety ($r = .42$, $p < .01$) and depression ($r = .41$, $p < .01$) and spirituality was not

significantly correlated with either alexithymia (r = -.12, p > .05) or mindfulness (r = -.07, p > .05). Thus, Hypothesis 1 was partially supported.

The positive correlation between spirituality and both anxiety and depression suggests that participants who reported a higher level of spirituality were less likely to experience elevated levels of anxiety and depression. The strength of the relationship between spirituality and anxiety in this study (r = -.33, p < .01) contrasts with the non-significant relationship between spirituality and anxiety (r = -.11, p > .05) that was reported in a study of undergraduate students (Young et al., 2000). One possible explanation for this difference in findings is that Young et al. used different measures of both spirituality and anxiety. Previous researchers (Cashwell et. al, *in press)* who used the same measures of spirituality and anxiety used in this study, however, found exactly the same correlation (r = -.33) between spirituality and anxiety among a college sample, suggesting that perhaps the relationship between spirituality and anxiety is not remarkably different between breast cancer survivors and other populations.

The relationship between spirituality and depression was stronger among this study's sample (r = -.50, p < .01) than among a samples of older adolescents (r = -.32, p < .01; Briggs & Shoffner, 2006), undergraduate students (r = -.14, p < .05; Young et al., 2000), and undergraduate and graduate students (r = -.27, p < .05; Cashwell et al., in press). These differences suggest that spirituality may be a particularly salient consideration in examining depression among breast cancer patients. Although causation cannot be inferred from these correlational statistics, the strength of this relationship is nonetheless noteworthy. This finding is consistent with previous arguments that

spirituality is of particular importance to cancer patients given the commonality of existential and spiritual concerns among this population (Cole & Pargament, 1999).

Further, the strength of the relationships between spirituality and both anxiety and depression is comparable to that in the only other research study that has examined spirituality and emotional well-being among breast cancer patients using a psychometrically sound spirituality instrument (Cotton et al., 1999), adding credence to the argument that spirituality is important for breast cancer patients. It is important to note, however, that Cotton et al. (1999) did not examine the specific variables of anxiety and depression and did not report the treatment status of their participants.

Finally, the relationship between spirituality and depression ($r = -.50$, $p < .01$) was stronger than that between spirituality and anxiety ($r = -.33$, $p < .01$) in this study. This may suggest that spirituality is a particularly effective protective factor against depression among breast cancer patients, although again causation cannot be inferred from this correlational data. Often, spirituality is associated with hope (ASERVIC, 1997), and hope is antithetical to depression. Thus, this finding is not surprising.

Another potential explanation for this difference in findings for anxiety and depression relates to the construct validity of the Trimodal Anxiety Questionnaire (TAQ; Lehrer & Woolfolk, 1982). The TAQ consists of three subscales that measure different aspects of anxiety, the somatic scale, the cognitive scale, and the behavioral scale. The somatic scale consists of items that were designed to assess the physical manifestations of anxiety; however, these items also refer to the physical sensations that are sometimes experienced as side effects of breast cancer treatment. Specifically, items 1 (*My throat*

gets dry), 7 (*My limbs tremble*), 10 (*My stomach hurts*), 14 (*I feel dizzy*), 23 (*My arms or legs feel stiff*), 30 (*I experience a tingling sensation somewhere in my body*), 31 (*My arms or legs feel weak*), 33 (*I experience muscular aches and pains*), and 34 (*I feel numbness in my face, limbs, or tongue*) of the somatic subscale of the TAQ fit this description. If participants responded positively to these items based on their experience of side effects, the results of Research Question 1 pertaining to anxiety may reflect participants' experience of treatment side effects instead of the physical manifestations of anxiety. If this is the case, the relationship between spirituality and anxiety may have been weakened.

The positive correlation between alexithymia and both anxiety ($r = .53$, $p < .01$) and depression ($r = .42$, $p < .01$) suggests that participants who reported a higher level of restricted emotions were more likely to experience increased symptoms of anxiety and depression. This finding is consistent with previous research that has found positive correlations between alexithymia and both anxiety and depression among Belgian women in treatment for breast cancer (Luminet et al., 2007). This consistency in findings adds credence to the argument that alexithymia negatively impacts the emotional well-being of breast cancer patients. Although causation cannot be inferred from these correlational statistics, the strength of the relationships is nonetheless noteworthy. Thus, it seems that alexithymia may be important to consider in the assessment of anxiety and depression among women in treatment for breast cancer.

In addition, and unexpectedly, alexithymia was positively correlated with mindfulness ($r = .48$, $p < .01$). No previous research studies have examined both

alexithymia and mindfulness among a sample of breast cancer patients; therefore, the relationship between the two constructs in such a sample is largely unknown. Cashwell et al. (in press) examined these variables among a sample of undergraduate and graduate students, however, and reported a statistically significant negative correlation between alexithymia and each of the five facets of mindfulness. Given this finding, and given that alexithymia involves difficulty identifying and describing feelings whereas mindfulness involves awareness and the ability to observe and describe one's present experience, it was expected that alexithymia and mindfulness would be negatively correlated among the current study's sample. It is possible that the positive correlation in the current study reflects participants' awareness, or mindfulness, about their own difficulties with identifying and describing feelings. This explanation is speculative, however, and further investigation of this relationship among breast cancer patients is needed. Another possible explanation involves the instrument that was used to measure mindfulness in the current study, the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006). The current study's sample scored almost a full standard deviation below a previously reported mean score on the FFMQ. In addition, the internal consistency of the FFMQ was .72 for the current study. Whereas this level of instrument reliability is considered adequate for social science research, a higher level of reliability is preferred (Heppner et al., 1999). Together, these two instrument statistics may have influenced the FFMQ's ability to accurately measure the construct of mindfulness among this sample.

Also surprising was the positive correlation between mindfulness and both anxiety ($r = .42$, $p < .01$) and depression ($r = .41$, $p < .01$) found in the current study. Few

researchers have examined the relationships among mindfulness, anxiety, and depression among breast cancer patients. Those who have, however, reported negative relationships between mindfulness and emotional and distress. Specifically, Tacon et al. (2004) reported a significant reduction in participants' reported levels of anxiety ($t = 4.95$, $p < .001$) and helplessness/hopelessness ($t = 2.66$, $p < .01$) following participants' completion of an eight-week mindfulness-based stress reduction program. It is important to note that whereas Tacon et al. examined the effect of the *practice* of mindfulness (i.e., progressive muscle relaxation, mindful meditation, and yoga) on symptoms of anxiety and depression, the current study assessed the relationship between the global construct of mindfulness and anxiety and depression. The global construct of mindfulness includes cognitive aspects of mindfulness such as *observing* and *describing* one's present experience. Thus, it may be that whereas the *practice* of mindfulness decreases symptoms of anxiety and depression, the cognitive aspects of mindfulness highlight participants' experiences of anxiety and depression. The results obtained by Cashwell et al. (in press) may provide some support for this offered explanation. Cashwell et al. reported a negative relationship between anxiety and each of the five facets of mindfulness except for the facets of observing ($\beta = .11$) and describing ($\beta = .14$). Because these two aspects of mindfulness represent awareness of and ability to express one's present experiences, the positive correlation between mindfulness and both anxiety and depression in the current study may reflect participants' awareness of their experiences of anxiety and depression.

Finally, spirituality was not significantly correlated with either alexithymia (r = -.12, p > .05) or mindfulness (r = -.07, p > .05) in the current study. Despite the lack of prior research regarding the relationship between spirituality and both alexithymia and mindfulness among breast cancer patients, it was expected that spirituality would be negatively correlated with alexithymia and positively correlated with mindfulness. Alexithymia is the restriction of emotions whereas healthy spirituality promotes full emotional expression (Cashwell et al., in press). Further, spirituality includes an awareness and acceptance of "what is," just as mindfulness includes awareness and acceptance of one's present experience (Cashwell et al.). These theoretical relationships among spirituality, alexithymia, and mindfulness supported the hypothesis that spirituality would be negatively correlated with alexithymia and positively correlated with mindfulness. In addition, Cashwell et al. reported negative correlations between alexithymia and each of the four factors of spirituality and positive correlations between the five facets of mindfulness and the four factors of spirituality among a sample of undergraduate and graduate students. The current study's results indicate that no significant relationship existed between spirituality and alexithymia or between spirituality and mindfulness for this group of participants.

Research Question 2

Research Question 2 was designed to assess how alexithymia and mindfulness moderated the relationship between spirituality and anxiety. Hypothesis 2a proposed that higher alexithymia would weaken the relationship between spirituality and anxiety. Whereas this hypothesis was not supported (R^2 = .39, R^2 change = .04, β = -2.31, t = -

1.91, $p > .05$), other results were obtained here that deserve attention. For example, one of the assumptions for testing this moderating effect was that spirituality would be a strong predictor of anxiety. Whereas spirituality did account for a significant amount of the variance in anxiety (11%), it accounted for a relatively small amount of the variance accounted for by the full model (39%). Indeed, although alexithymia was expected to moderate the relationship between spirituality and anxiety, results indicate that alexithymia was, in fact, a stronger direct predictor than was spirituality, of its own accord accounting for 24% of the variance in anxiety.

Whereas this result was surprising given the proposed importance of spirituality among breast cancer patients, it is not inconsistent with the literature on alexithymia and anxiety. For example, in a study by Cashwell et al. (in press), alexithymia was found to be the single strongest predictor of anxiety out of a total of eight predictors and accounted for 21% of the variance in anxiety. Similar to the current study, Cashwell et al. hypothesized that spirituality would be a strong predictor of anxiety, but found alexithymia (and not spirituality) to contribute to the prediction of anxiety. The results of Cashwell et al. and of the current study may indicate that alexithymia plays a more important role in the experience of anxiety than does spirituality. Although previous studies have not examined the relative importance of both alexithymia and spirituality to the experience of anxiety among breast cancer patients, researchers have reported a positive relationship between alexithymia and anxiety among Belgian breast cancer patients ($r = .31$, $p < .001$; Luminet et al., 2007) and among Japanese breast cancer patients ($r = .20$, $p < .05$; Mantani et al., 2007). Further, 36% of breast cancer patients

experience alexithymia; this estimate is more than three times as high as the estimate given for the prevalence of alexithymia among the general population (Manna et al., 2007). It seems clear, then, that alexithymia is common and associated with anxiety among breast cancer patients. Thus, addressing such restriction of emotions may be critical in the counseling of breast cancer patients.

Hypothesis 2b proposed that higher mindfulness would strengthen the relationship between spirituality and anxiety. This hypothesis was not supported ($R^2 = .27$, R^2 change $= .00$, $\beta = -.21$, $t = -.12$, $p > .05$). Similar to the case in Hypothesis 2a, mindfulness was expected to moderate the relationship between spirituality and anxiety; however, these results indicate that mindfulness was a stronger predictor than was spirituality, accounting for 16% of the variance in anxiety. Even more surprising was the positive direction of the relationship between mindfulness and anxiety indicating that higher mindfulness predicted higher anxiety. This was in contrast to this hypothesis and to the previous research results regarding mindfulness and anxiety among breast cancer patients. A potential explanation for this difference revolves around the nature of these previous studies. More specifically, previous researchers examined specifically the effects of a mindfulness-based stress reduction program on anxiety among breast cancer patients. In each of these studies, the *practice* of mindfulness was associated significantly with decreased anxiety among breast cancer patients (Carlson et al., 2004; Tacon et al., 2004). It is possible that the practice of mindfulness (i.e., meditation) decreases anxiety while the cognitive facets of mindfulness such as observing and describing one's present experience may not function in the same way. Some support for this suggestion may be

found in the results of Cashwell et al. (in press). Specifically, Cashwell et al. reported a negative relationship between anxiety and each of the five facets of mindfulness except for the two factors of observing (β = .11) and describing (β = .14). Observing can be described as noticing or attending to one's experience and describing can be described as applying words to one's experience (Baer et al., 2006). Because these two facets of mindfulness indicate awareness of and ability to express one's experience, this study's result may indicate simply that this sample of breast cancer patients was aware, or mindful of, their experience of anxiety. This, if it is the case, is a psychologically healthy approach.

Research Question 3

Research Question 3 was designed to assess how alexithymia and mindfulness moderate the relationship between spirituality and depression. Hypothesis 3a proposed that higher alexithymia would weaken the relationship between spirituality and depression. Whereas this hypothesis was not supported (R^2 = .40, R^2 change = .02, β = -1.52, t = -1.26, p > .05), other results were obtained here that deserve attention. For example, spirituality was a strong predictor of depression (β = -.50), accounting for 25% of the total variance in depression. This indicates that as participants' spirituality increased, their experience of depression tended to decrease. This is consistent with the results of the only other researcher that has examined spirituality among breast cancer patients using a psychometrically sound spirituality instrument (Cotton et al., 1999) who found that spirituality was negatively associated with feelings of hopelessness (r = -.55, p < .001). It also is consistent with Cole and Pargament's (1999) recommendation that

breast cancer patients should maintain the spiritual beliefs that sustain them. Further, in this study, spirituality accounted for a higher amount of variance in depression (25%) than it had in a previous study (3%) where the sample was undergraduate students (Young et al., 2000). This may indicate that spirituality is an even more important resource for breast cancer patients than it is for a younger and, presumably healthier, population.

Another interesting result of this research question was that alexithymia operated as a predictor of depression, as well (β = .37), and accounted for an additional 13% of the variance in depression after controlling for spirituality. This suggests that as participants experienced higher levels of alexithymia, they also tended to experience higher levels of depression. This is consistent with the results obtained by Cordova et al. (2001) who reported that breast cancer survivors who used avoidance to cope with their illness reported higher levels of depression than those who openly discussed their emotions. The consistency of these results suggests that alexithymia worsens the emotional burden of breast cancer and may be important for counselors to address in their work with this population.

Hypothesis 3b proposed that higher mindfulness would strengthen the relationship between spirituality and depression. Whereas this hypothesis was not supported (R^2 = .39, R^2 change = .00, β = -1.29, t = -.78, p > .05), the results pertaining to mindfulness were interesting. Mindfulness proved to be a predictor of depression (R^2 = .39, R^2 change = .14, β = .37, t = 3.88, p < .01), accounting for 14% of the variance in depression after controlling for spirituality. The positive direction of the relationship between mindfulness

and depression, however, was surprising. This is inconsistent with previous research in which completion of a mindfulness-based stress reduction program was associated with decreased hopelessness (Tacon et al., 2004) but consistent with the positive relationship between mindfulness and anxiety (β = .40) previously reported as a result in the current study. Similar to the explanation offered for the results of Hypothesis 2b, the positive association between mindfulness and depression may indicate that the breast cancer patients in this study simply were aware, or mindful of, their experiences of depression.

Research Question 4

Hypothesis 4 proposed that relationship status and stage of breast cancer would further predict anxiety after controlling for the effects of spirituality, alexithymia, and mindfulness. Relationship status did not account for additional variance in anxiety (R^2 = .41, R^2 change = .02, β = -.15, t = -1.52, $p > .05$). This is inconsistent with the findings of Maggard et al. (2003) who reported that unpartnered breast cancer patients reported more emotional distress than their married counterparts. Stage of breast cancer, however, accounted for an additional 4% of the variance in anxiety (R^2 = .43, R^2 change = .04, β = .21, t =2.17, $p < .05$); thus, Hypothesis 4 was partially supported. This result of higher stages of breast cancer being associated with increased prevalence and incidence of depression is consistent with previous findings (Compas et al., 1999).The effect size was small for the current sample, however, and likely of limited clinical importance.

Research Question 5

Hypothesis 5 proposed that relationship status would further predict depression after controlling for spirituality, alexithymia, and mindfulness. This hypothesis was not

supported (R^2 = .46, R^2 change = .03, β = -.16, t = -1.66, p > .05). The lack of support for this hypothesis is inconsistent with previous research in which single, divorced, and widowed breast cancer patients have experienced more emotional distress than married breast cancer patients (Maggard et al., 2003). There are two factors that likely contribute to this finding. First, this analysis was conducted on a relatively small sample. Second, and likely more important, the research question was phrased in a way that relationship status was not considered in a vacuum. That is, the analysis was not to assess the amount of variance in depression that was accounted for solely by relationship status. Rather, the question was framed to assess whether relationship status accounted for variance with spirituality, alexithymia, and mindfulness already in the equation. It is important to note that spirituality, alexithymia, and mindfulness accounted for 40% of the variance in depression. Thus, the failure of relationship status to add to the prediction of depression beyond these three predictors may suggest that relationship status shares predictive variance with one or more of the predictors that were already in the model. Future research should be geared toward further teasing out the relationships between spirituality, alexithymia, mindfulness, and stage of breast cancer.

Limitations

The results of this study provide valuable information regarding the importance of spirituality, alexithymia, and mindfulness among breast cancer patients related to anxiety and depression. As with all research, however, results must be viewed within the context of the limitations of the study.

First, each of the instruments used in this study rely upon self-report. For this reason, each of these instruments is subject to reporter bias and participants' ability to accurately report is influenced by their level of self-awareness. This must be taken into consideration when drawing conclusions about the data obtained. Similarly, mono-method bias may be an issue as self-report is the sole form of data collection.

Second, some of the items included in the instrument packet are designed to assess the physical manifestations of alexithymia, anxiety, and depression; however, these items also refer to physical sensations that could be experienced by some participants as the side effects of breast cancer treatment. Therefore, it may be unclear whether the participants' responses to these items indicate the physical manifestations of alexithymia, anxiety, and depression or might, in some cases, be side effects of breast cancer treatment. More specifically, item 7 (*I am often puzzled by sensations in my body*) on the Toronto Alexithymia Scale – 20 (Bagby et al., 1994a,b); items 1 (*My throat gets dry*), 14 (*I feel dizzy*), 23 (*My arms or legs feel stiff*), 30 (*I experience a tingling sensation somewhere in my body*), 31 (*My arms or legs feel weak*), 33 (*I experience muscular aches and pains*), and 34 (*I feel numbness in my face, limbs, or tongue*) on the Trimodal Anxiety Questionnaire (Lehrer & Woolfolk, 1982), and items 4 (*I felt that everything I did was an effort*), 7 (*My sleep was restless*), and 10 (*I could not "get going"*) on the Center for Epidemiologic Studies Short Depression Scale (Andresen et al., 1994) fit this description. This provides some threat to the construct validity of these measures.

There also may be issues related to the Demographic Questionnaire. First, participants were not asked about their race and/or ethnicity. It is possible that this

demographic variable would have played a role in participants' experience of spirituality, anxiety, and/or depression; however, without this information it is impossible to know. Second, participants were neither asked to indicate whether they were receiving adjuvant treatment nor what type of adjuvant treatment they were receiving. Again, this information may have proved important for the results of this study. Finally, the term "Full Mastectomy" that was used as one of the response options to question number eight (*Please indicate what type of surgical treatment you received*), may have been confusing to participants as several wrote in "double mastectomy" beside this option.

Additional limitations result from the sampling procedure that was used. All participants were recruited from one Cancer Services center in the same region. It is unknown the extent to which the experiences of these women generalizes to other settings. Relatedly, participation in the study was strictly voluntary and participants could opt out of the study at any time up to when they mailed their instruments to the researcher. It is unknown how those who chose not to participate differed from those who chose to complete and submit the instruments. Finally, only 69 participants were obtained for this study. Whereas this was sufficient for the analysis of the main research questions, it required that the fourth and fifth research questions be analyzed for heuristic purposes only.

Additionally, spirituality is an ethereal concept, and thus proves difficult to identify, define, and assess. For the purposes of this study, Howden's (1992) definition of spirituality was utilized. There is no universally accepted definition of spirituality, however, and Howden's definition of spirituality is but one possibility. In fact, the

counseling field has yet to identify a single, agreed upon definition of the construct of spirituality (Stanard et al., 2000). This may very well be a product of the individual and highly personal nature of spirituality but reflects a potential limitation to the findings, nonetheless.

Additionally, the results of this study reflect data obtained at a specific point in the cancer experience and from a specific population. In other words, the results of this study represent a snapshot of what can be a long and varied process. Therefore, it is unknown to what extent these results can be generalized to other points in the cancer experience and to those suffering from other forms of cancer.

Implications

Spirituality has been shown to buffer anxiety and depression (Young et al., 2000) and is negatively associated with depression (Briggs & Shoffner, 2006). For these and other reasons, counselors have accepted the call for the inclusion of spirituality in their work with clients (Morgan, 2007). The anxiety and depression often experienced by breast cancer patients (Bender et al., 2005; Hughes, 1982), coupled with the commonality of existential and spiritual concerns among this population, suggest that spirituality might be an especially important resource for counselors working with breast cancer patients (Cole & Pargament, 1999; Pargament, 2007). Further, because spirituality occurs within a broader context of well-being and because other factors of well-being interact with spirituality (Myers et al., 2000), it is important to assess spirituality within this broader context (Cashwell et al., in press; Cotton et al., 1999). Alexithymia and mindfulness are two constructs that have been identified as important factors in the emotional and

psychological well-being of breast cancer patients (Garland et al., 2007; Spiegel & Kimerling, 2001; Tacon et al, 2004). Thus, this study was designed to address a gap in the literature by examining the variance in anxiety and depression among breast cancer patients that could be accounted for by spirituality, and to further consider the moderating effects of alexithymia and mindfulness.

As expected, spirituality was correlated negatively with anxiety and depression at a similar level as in previous studies of breast cancer patients and at a higher level than some previous studies of younger, healthier participants. Given this finding, coupled with previous empirical findings (Cotton et al., 1999; Romero et al., 2006) and the expositive work of Pargament (2007), it may be particularly important for counselors to address spirituality when working with breast cancer patients. Further, this may be especially true for breast cancer patients who are experiencing depression, given the strong inverse relationship between spirituality and depression. When working with breast cancer patients, counselors should consider spirituality as a resource and incorporate it in the counseling process when appropriate. This can be accomplished by asking questions about how the client's spirituality increases her sense of hope and peace, or by encouraging the client to continue to engage in those spiritual activities that have provided comfort and strength in previous times of difficulty. If the client is interested in incorporating spiritual work into her counseling sessions, guided imagery, the spiritual genogram (Frame, 2003), music, and key passages from the client's book of faith are options that could be utilized. Before incorporating spirituality into a client's work, it is important to remember that spirituality is personal and that each client will have a unique

spiritual journey. For this reason, it is important to have an understanding of where the client is in her journey before choosing spiritual interventions. This can be accomplished by applying a model of spiritual development to gain understanding of the client's stage of spiritual development (Fowler, 1981; Genia, 1995). Then, interventions appropriate to the client's stage of spiritual development may be chosen.

Despite the negative correlation between spirituality and both anxiety and depression, spirituality was not as strong a predictor of anxiety and depression as expected. For example, alexithymia and mindfulness both were stronger predictors of anxiety than was spirituality. In addition, alexithymia was positively correlated with both anxiety and depression in the current study. Based on these results, and on previous reports that alexithymia is relatively common among breast cancer patients, it seems critical that counselors address the importance of emotional awareness and emotional expression when working with this population. This could be accomplished in several ways. When indicated, counselors should educate breast cancer patients about the benefits of emotional awareness and emotional expression and the negative effects of alexithymia. Counselors also should encourage, support, and validate emotional experiences within counseling sessions. In addition, counselors might utilize an approach called Focusing (Gendlin, 1981), an intervention that facilitates emotional awareness by encouraging clients to listen to the messages of the body with compassion. Another option for encouraging clients to engage in emotional expression is to provide them with a variety of art and craft supplies and ask them to create a visual representation of their emotional experience of cancer. By using these interventions with breast cancer patients,

counselors may be able to decrease alexithymia and its negative effects, including anxiety and depression.

Additionally, based on these findings, it seems important to consider the role that the patient's spiritual life plays in emotional expression. For many, a spiritual life supports a full experience and expression of all emotions, potentially diminishing alexithymia and, subsequently, decreasing anxiety and depression. For others, however, their spiritual or religious lives may involve a belief system that inhibits emotional experience. For example, a client who holds a belief that they should not be angry, sad, or fearful as a result of the diagnosis because it is "God's Will" likely will repress undesirable emotions. Evidence from the current study suggests that such an occurrence may be deleterious to the patient and contribute to increases in anxiety and depression.

Another implication of this study is related to the unexpected positive relationship found between mindfulness and both anxiety and depression. In contrast, previous researchers have reported negative relationships between the completion of mindfulness based stress reduction programs (Kabat-Zinn, 1990) and both anxiety (Carlson et al., 2004; Tacon et al., 2004) and depression (Tacon et al.). One possible explanation for this difference is that the participants in these previous studies obtained emotional benefits from the behavioral *practice* of mindfulness while the participants in the current study simply were mindful of their experiences of anxiety and depression, resulting in a positive relationship between among these constructs. If this is the case, counselors may want to remember to focus on the more behavior-oriented facets of mindfulness in their

work with breast cancer patients as described by Kabat-Zinn. For example, counselors may want to educate their clients about the benefits of basic mindfulness practices such as body scan, mindful meditation, and yoga. If desired and appropriate, these practices of mindfulness can be incorporated into counseling sessions as interventions tailored to decrease anxiety and depression. These tools may be particularly useful for clients to practice during treatment procedures, such as chemotherapy or radiation, and before learning the results of diagnostic tests as these are anxiety-inducing occasions. Another possible explanation for this finding has to do with the subscales of mindfulness. Previous researchers (Cashwell et al., *in press*) found that specific subscales of mindfulness (*Observing* and *Describing*) to be positively related to anxiety. Because of the limited sample size of the current study, however, only the global scale of Mindfulness was included in the analyses. It is possible that the various subscales are related in different ways to anxiety and depression. Future research with larger samples will allow for a more detailed consideration of how the mindfulness subscales relate to anxiety and depression among breast cancer survivors.

Also related to anxiety is the stage of breast cancer with which participants have been diagnosed. In the current study, stage of breast cancer was positively correlated with anxiety. In addition, stage of breast cancer was predictive of anxiety even after controlling for spirituality, alexithymia, and mindfulness, albeit with a modest effect size. Given these results, and the fact that illness often leads to existential concerns, it may be beneficial for counselors to address existential concerns with all breast cancer patients and to consider that women with higher stages of diagnoses may experience heightened

anxiety. In particular, clients may benefit from direct discussion of their fears related to death and dying. This is consistent with the findings of Spiegel and Kimerling (2001) who argued that direct discussions about death and dying both increase breast cancer patients' sense of connection and help to divide their anxiety into manageable pieces so that coping is easier.

Overall, the results of the current study imply that spirituality, alexithymia, and mindfulness each are important in the experience of anxiety and depression among breast cancer patients currently receiving treatment. Thus, it may benefit breast cancer patients for counselors to include elements of spirituality, emotional expression, and mindfulness into their work with these women, although more research is needed to fully understand the relationship between mindfulness and both anxiety and depression. In this way, the results of the current study might benefit women with breast cancer. Further, because breast cancer patients are in frequent contact with their nurses and doctors, it is important that counselors advocate for the inclusion of spirituality in the treatment of breast cancer patients with medical professionals.

Future Research

At the completion of the current study, several questions remain unanswered that deserve further attention. First, several of the current study's results were surprising. For example, although spirituality predicted both anxiety and depression, these relationships were weaker than expected. In addition, alexithymia was a stronger predictor of anxiety than was spirituality. Also, mindfulness was positively correlated with and positively predicted both anxiety and depression. Further, alexithymia and mindfulness were

positively correlated whereas spirituality was not correlated with either alexithymia or mindfulness. Finally, relationship status was not a predictor of either anxiety or depression. Given these surprising results and the fact that this is the first study to examine this combination of variables among a sample of breast cancer patients, a replication of this study would be informative. Further, only 69 breast cancer patients participated in this study. Whereas this sample size was sufficient for testing the study's main hypotheses, the sample size limited the extent to which the fourth and fifth research questions were examined. Further, it was not possible to consider the subscales of mindfulness which, as previously mentioned, may be important to a deeper understanding of mindfulness among breast cancer patients. Thus, it would be beneficial to replicate this study with a larger and more geographically diverse sample. A larger sample would also allow for a more detailed level of analysis in which the various aspects of mindfulness, anxiety, and depression could be considered. For example, it is possible that some facet of mindfulness (e.g., observing) is particularly important in relation to some aspect of anxiety (e.g., cognitive anxiety) and to some aspect of depression. In addition, a larger sample would allow for a more detailed analysis of the somatic subscale of the TAQ (Lehrer & Woolfolk, 1982). It is possible that some of the items of the somatic scale of the TAQ (Lehrer & Woolfolk) measured participants' experience of treatment side effects instead of the physical manifestations of anxiety. If this is the case, results of the current study pertaining to anxiety may have been affected. Specifically, the negative relationship between spirituality and anxiety may have been weakened. Thus, more detailed analyses may provide important information relevant to breast cancer patients.

Because of limits in sample size, however, such analyses were not possible in the current study.

Second, based on the unexpected positive relationship between mindfulness and both anxiety and depression in the current study, it is recommended that future researchers test the hypothesis that the *observing* and *describing* facets of mindfulness highlight one's experience of anxiety and depression. This could be accomplished by analyzing the five facets of mindfulness separately. Another approach, perhaps a richer way of exploring this hypothesis, would be to perform a qualitative study in which participants have the opportunity to describe the emotional impact of mindfulness and its facets.

Further, intervention studies are needed. The results of this study suggest that spirituality, alexithymia, and mindfulness are important in predicting both anxiety and depression among breast cancer survivors. The results are correlational only, however, and inferences of causality cannot be made from these findings. Future researchers should design intervention efficacy studies to consider, for example, how mindfulness training, a psycho-spiritual emphasis in counseling, and a focus on emotional expressivity (i.e., decreasing alexithymia) impacts anxiety and depression among breast cancer survivors.

Finally, stage of breast cancer and anxiety were positively correlated in the current study. This result is consistent with previous arguments that stage of breast cancer is a potentially confounding variable. Thus, it is recommended that researchers continue to control for stage of breast cancer when studying breast cancer patients.

Conclusion

The current study examined spirituality within a broader context of well-being by investigating the relationship between spirituality and both anxiety and depression as moderated by alexithymia and mindfulness among women in treatment for non-metastatic breast cancer. Survey methodology was used and a sample of 69 breast cancer patients was obtained. Data were analyzed and results for each hypothesis were presented. Spirituality was negatively associated with anxiety and depression. Further, spirituality negatively predicted both anxiety and depression. This relationship was weaker than expected, however. In addition, mindfulness and alexithymia both were positively correlated with anxiety and depression. These results were discussed as they related to existing literature and recommendations for counselors and future researchers were made.

Relatedly, alexithymia was a stronger predictor of anxiety than was spirituality. This result was discussed within the context of the problematic nature of emotional restriction among breast cancer patients. Then, recommendations for counselors and future researchers were made pertaining to this result. Mindfulness was a positive predictor of both anxiety and depression. The surprising nature of this finding was discussed within the context of previous research and a potential explanation was offered. In addition, implications of this finding were provided for counselors working with breast cancer patients and recommendations were made for future research. The limitations of the study were discussed as were implications for counselors working with breast cancer patients.

This study highlighted the importance of examining spirituality in a broader context of well-being. The results of this study indicate the need for more research on spirituality, alexithymia, and mindfulness and on how these constructs predict anxiety and depression among breast cancer patients. Given the nature of these constructs, qualitative inquiries may best capture their role in the experiences of breast cancer patients. Although many questions remain unanswered, it appears that spirituality, alexithymia, and mindfulness are salient to both anxiety and depression among breast cancer patients.

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APPENDIX A: FLYER

Seeking Breast Cancer Patients for a Questionnaire Research Study*

PURPOSE OF THIS STUDY
To better understand women's emotional and spiritual responses to the breast cancer experience.

ELIGIBLITY
Women who have received surgical treatment and/or who are currently receiving chemotherapy, radiation, or hormone therapy for breast cancer that has not spread to other parts of the body.

YOU WILL BE ASKED...
To complete a one-time paper and pencil questionnaire about your experience with breast cancer.

TIME COMMITMENT – 15 to 30 MINUTES

LOCATION OF STUDY
By mail

CONTACT
Amy Banner, a doctoral student in Counseling at
The University of North Carolina at Greensboro.
Phone: 336-404-8646
Email: atcarrie@uncg.edu

*This study has been approved by the Institutional Review Board and the Office of Research Compliance at The University of North Carolina at Greensboro and is supported by Cancer Services.

APPENDIX B: COVER LETTER

May 4th, 2009

Hello,

My name is Amy Banner and I am a doctoral student in the Counseling and Counselor Education program in the School of Education at The University of North Carolina at Greensboro. I am conducting research about the experiences of women in treatment for breast cancer for my dissertation. This study has been approved by the Office of Research Compliance at The University of North Carolina at Greensboro and is supported by Cancer Services in Winston-Salem.

I am writing to request your participation in a brief questionnaire about the emotional and spiritual experiences of breast cancer. As you know, the diagnosis and treatment of breast cancer are difficult both physically and emotionally. Surprisingly, very few researchers have examined the emotional and spiritual experiences of breast cancer. The breast cancer experience is unique. Likewise, the needs of women in treatment for breast cancer are unique. My goal is to learn more about these experiences and needs from you so that counselors, doctors, nurses, and other health care professionals will be able to provide services that better meet the needs of women like yourself.

If you choose to contribute to this research, this questionnaire will take 15 – 30 minutes of your time. All of your information will be kept secure and confidential and you may return your questionnaire in the pre-stamped envelope provided. You are free to end participation in this study at any time, as well.

You may indicate your consent to participate in this study by returning one copy of the informed consent form, either signed or unsigned, and the completed questionnaires to me. The second copy of the informed consent form is yours to keep. Please return the completed packet to me within one week of receiving this mail.

I deeply appreciate your consideration of my request and your time completing the questionnaire. Please accept the $1 bill included in this packet as a small token of appreciation for your time. Finally, please feel free to contact me with any questions by phone at (336) 404-8646 or by email at atcarrier@uncg.edu.

Sincerely,

_____

Amy T. Banner, M.A., NCC
Doctoral Student
Counseling and Counselor Education
School of Education
The University of North Carolina at Greensboro

APPENDIX C: INSTRUMENTS USED IN THIS STUDY

Demographic Questionnaire

Directions: Please circle or fill in the appropriate information for each question. The information collected on this questionnaire is for data analysis purposes only. Your responses will in no way be used to identify you as an individual.

1. Age: _____

2. Do you have children? (Check one) Yes:_____ No:_____

3. Are you in a committed romantic relationship? (Check one) Yes:_____
   No:_____

4. When were you diagnosed with breast cancer? (Month/Year):
   _____

5. With what stage of breast cancer have you been diagnosed? (Check one)

   Stage I:_____ Stage II:_____ Stage III:_____

6. Have you received surgical treatment for breast cancer? (Check one)

   Yes:_____ No:_____

7. If you answered "Yes" to #6, please indicate the date of your surgery:
   _____

8. If you answered "Yes" to #6, please indicate what type of surgical treatment you received:

   Lumpectomy:_____ Partial Mastectomy:_____ Full Mastectomy:_____

9. Is this your first time being diagnosed with cancer? (Check one)

   Yes:_____ No:_____

10. Has anyone in your immediate family (parent, sibling, child) been diagnosed with breast cancer? (Check one)

    Yes:_____ No:_____

SAS

DIRECTIONS: Please indicate your response by circling the appropriate letters indicating how you respond to the statement.

MARK:

"SA" if you STRONGLY AGREE

" A " if you AGREE

"AM" if you AGREE MORE than DISAGREE

"DM" if you DISAGREE MORE than AGREE

" D " if you DISAGREE

"SD" if you STRONGLY DISAGREE

There is no "right" or "wrong" answer. Please respond to what you think or how you feel at this point in time.

1.	I have a general sense of belonging.	SA A AM DM D SD
2.	I am able to forgive people who have done wrong to me.	SA A AM DM D SD
3.	I have the ability to rise above or go beyond a physical or psychological condition.	SA A AM DM D SD
4.	I am concerned about destruction of the environment.	SA A AM DM D SD
5.	I have experienced moments of peace in a devastating event.	SA A AM DM D SD

6.	I feel a kinship to other people.	SA A AM DM D SD
7.	I feel a connection to all of life.	SA A AM DM D SD
8.	I rely on an inner strength in hard times.	SA A AM DM D SD
9.	I enjoy being of service to others.	SA A AM DM D SD
10.	I can go to a spiritual dimension within myself for guidance.	SA A AM DM D SD
11.	I have the ability to rise above or go beyond a body change or body loss.	SA A AM DM D SD
12.	I have a sense of harmony or inner peace.	SA A AM DM D SD
13.	I have the ability for self-healing.	SA A AM DM D SD
14.	I have an inner strength.	SA A AM DM D SD
15.	The boundaries of my universe extend beyond usual ideas of what space and time are thought to be.	SA A AM DM D SD
16.	I feel good about myself.	SA A AM DM D SD
17.	I have a sense of balance in my life.	SA A AM DM D SD
18.	There is fulfillment in my life.	SA A AM DM D SD

19.	I feel a responsibility to preserve the planet.	SA	A	AM	DM	D	SD
20.	The meaning I have found for my life provides a sense of peace.	SA	A	AM	DM	D	SD
21.	Even when I feel discouraged, I trust that life is good.	SA	A	AM	DM	D	SD
22.	My life has meaning and purpose.	SA	A	AM	DM	D	SD
23.	My innerness or an inner resource helps me deal with uncertainty in life.	SA	A	AM	DM	D	SD
24.	I have discovered my own strength in time of struggle.	SA	A	AM	DM	D	SD
25.	Reconciling relationships is important to me.	SA	A	AM	DM	D	SD
26.	I feel a part of the community in which I live.	SA	A	AM	DM	D	SD
27.	My inner strength is related to a belief in a Higher Power or Supreme Being.	SA	A	AM	DM	D	SD
28.	I have goals and aims for my life.	SA	A	AM	DM	D	SD

Women's Spirituality Questionnaire (WSQ)

29.	Maintaining healthy, mutually respectful, and genuine relationships is important to me.	SA	A	AM	DM	D	SD
30.	I have a sense of integration in my life.	SA	A	AM	DM	D	SD
31.	My inner strength is nurtured by my experience of the divine.	SA	A	AM	DM	D	SD
32.	I am able to embrace my current physical, emotional, and psychological condition.	SA	A	AM	DM	D	SD
33.	I enjoy giving and receiving.	SA	A	AM	DM	D	SD
34.	I can remain gentle with and connected to my body during physical change and loss.	SA	A	AM	DM	D	SD
35.	I am able to be gentle with myself and others.	SA	A	AM	DM	D	SD
36.	I am maturing and opening.	SA	A	AM	DM	D	SD

TAS - 20

DIRECTIONS: Please rate each of the following statements by circling the number that best describes you using the scale provided.

Item	Not At All Like Me		Somewhat Like Me		Completely Like Me
1. I am often confused about what emotions I am feeling.	1	2	3	4	5
2. It is difficult for me to find the right words for my feelings.	1	2	3	4	5
3. I have physical sensations that even doctors don't understand	1	2	3	4	5
4. I am able to describe my feelings easily	1	2	3	4	5
5. I prefer to analyze problems rather than just describe them	1	2	3	4	5
6. When I am upset, I don't know if I am sad, frightened, or angry	1	2	3	4	5
7. I am often puzzled by sensations in my body	1	2	3	4	5
8. I prefer to just let things happen rather than try to understand why they turned out that way.	1	2	3	4	5
9. I have feelings that I can't quite identify.	1	2	3	4	5
10. Being in touch with emotions is essential	1	2	3	4	5
11. I find it hard to describe how I feel about people.	1	2	3	4	5

12. People tell me to describe my feelings more.	1	2	3	4	5
13. I don't know what's going on inside me.	1	2	3	4	5
14. I often don't know why I am angry.	1	2	3	4	5
15. I prefer talking to people about their daily activities than about their feelings.	1	2	3	4	5
16. I prefer to watch "light" entertainment shows rather than psychological dramas.	1	2	3	4	5
17. It is difficult for me to reveal my innermost feelings, even to close friends.	1	2	3	4	5
18. I can feel close to someone, even in moments of silence.	1	2	3	4	5
19. I find examination of my feelings useful in solving personal problems.	1	2	3	4	5
20. Looking for hidden meanings in movies or plays distracts from their enjoyment.	1	2	3	4	5

5-FACET M QUESTIONNAIRE

DIRECTIONS: Please rate each of the following statements using the scale provided. Write the number in the blank that best describes <u>your own opinion</u> of what is <u>generally true for you</u>.

1	2	3	4	5
never or very rarely true	**rarely true**	**sometimes true**	**often true**	**very often or always true**

_____ 1. When I'm walking, I deliberately notice the sensations of my body moving.

_____ 2. I'm good at finding words to describe my feelings.

_____ 3. I criticize myself for having irrational or inappropriate emotions.

_____ 4. I perceive my feelings and emotions without having to react to them.

_____ 5. When I do things, my mind wanders off and I'm easily distracted.

_____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.

_____ 7. I can easily put my beliefs, opinions, and expectations into words.

_____ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.

_____ 9. I watch my feelings without getting lost in them.

_____ 10. I tell myself I shouldn't be feeling the way I'm feeling.

_____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.

_____ 12. It's hard for me to find the words to describe what I'm thinking.

_____ 13. I am easily distracted.

_____ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.

_____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.

_____ 16. I have trouble thinking of the right words to express how I feel about things

1	2	3	4	5
never or very rarely true	**rarely true**	**sometimes true**	**often true**	**very often or always true**

_____ 17. I make judgments about whether my thoughts are good or bad.

_____ 18. I find it difficult to stay focused on what's happening in the present.

_____ 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.

_____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

_____ 21. In difficult situations, I can pause without immediately reacting.

_____ 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.

_____ 23. It seems I am "running on automatic" without much awareness of what I'm doing.

_____24. When I have distressing thoughts or images, I feel calm soon after.

_____ 25. I tell myself that I shouldn't be thinking the way I'm thinking.

_____ 26. I notice the smells and aromas of things.

_____ 27. Even when I'm feeling terribly upset, I can find a way to put it into words.

_____ 28. I rush through activities without being really attentive to them.

_____ 29. When I have distressing thoughts or images I am able just to notice them without reacting.

_____ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

_____ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

_____ 32. My natural tendency is to put my experiences into words.

_____ 33. When I have distressing thoughts or images, I just notice them and let them go.

_____ 34. I do jobs or tasks automatically without being aware of what I'm doing.

1	2	3	4	5
never or very rarely true	**rarely true**	**sometimes true**	**often true**	**very often or always true**

_____ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.

_____ 36. I pay attention to how my emotions affect my thoughts and behavior.

_____ 37. I can usually describe how I feel at the moment in considerable detail.

_____ 38. I find myself doing things without paying attention.

_____ 39. I disapprove of myself when I have irrational ideas.

TAQ

DIRECTIONS: Please circle the number that indicates how you feel for each item. <u>For example</u>, if you feel happy often, but not all of the time, put…

I feel happy.

0	1	2	3	4	5	(6)	7	8
Never								Extremely Often

---

1. My throat gets dry.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

2. I have difficulty swallowing.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

3. I try to avoid starting conversations.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

4. My heart pounds.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

5. I picture some future misfortune.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

6. I avoid talking to people in authority (my boss, policemen).

0	1	2	3	4	5	6	7	8
Never								Extremely Often

7. My limbs tremble.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

8. I can't get some thought out of my mind.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

9. I avoid going into a room by myself where people are already gathered and talking.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

10. My stomach hurts.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

11. I dwell on mistakes that I have made.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

12. I avoid new or unfamiliar situations.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

13. My neck feels tight.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

14. I feel dizzy.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

15. I think about possible misfortunes to my loved ones.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

16. I cannot concentrate at a task or job without irrelevant thought intruding.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

17. I pass by school friends, or people I know but have not seen for a long time, unless they speak to me first.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

18. I breathe rapidly.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

19. I keep busy to avoid uncomfortable thoughts.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

20. I can't catch my breath.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

21. I can't get some pictures or images out of my mind.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

22. I try to avoid social gatherings.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

23. My arms or legs feel stiff.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

24. I imagine myself appearing foolish with a person whose opinion of me is important.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

25. I find myself staying home rather than involving myself in activities outside.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

26. I prefer to avoid making specific plans for self-improvement.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

27. I am concerned that others might not think well of me.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

28. I try to avoid challenging jobs.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

29. My muscles twitch or jump.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

30. I experience a tingling sensation somewhere in my body.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

31. My arms or legs feel weak.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

32. I have to be careful not to let my real feelings show.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

33. I experience muscular aches and pains.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

34. I feel numbness in my face, limbs or tongue.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

35. I experience chest pains.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

36. I have an uneasy feeling.

0	1	2	3	4	5	6	7	8
Never								Extremely Often

CES-D 10

DIRECTIONS: Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way <u>during the past week</u>: (circle one number on each line).

	Rarely or none of the time	**Some or a little of the time**	**A moderate amount of time**	**All of the time**
During the past week…				
1. I was bothered by things that usually don't bother me…….0		1	2	3
2. I had trouble keeping my mind on what I was doing……..0		1	2	3
3. I felt depressed……..0		1	2	3
4. I felt that everything I did was an effort…….0		1	2	3
5. I felt hopeful about the future……...0		1	2	3
6. I felt fearful……...0		1	2	3
7. My sleep was restless……0		1	2	3
8. I was happy……...0		1	2	3
9. I felt lonely……0		1	2	3
10. I could not "get going"……..0		1	2	3

Permission to Use the Spirituality Assessment Scale (SAS)

From: Amy Carrier atcarrie@uncg.edu

To: Judy Howden judy_howden@baylor.edu

Date: Tuesday, Dec 9, 2008 at 2:09 PM

Hello Dr. Howden,

I enjoyed speaking with you on the phone yesterday and appreciate your willingness to let me use your SAS. My dissertation study title is The Effects of Spirituality on Anxiety and Depression among Breast Cancer Patients: The Moderating Effects of Alexithymia and Mindfulness. Please let me know if you have further questions or need further information from me.

Many thanks,
Amy
--
Amy Tais Carrier, M.A, NCC
Doctoral Student
Counseling and Counselor Education
The University of North Carolina at Greensboro

From: Judy Howden judy_howden@baylor.edu

To: Amy Carrier atcarrie@uncg.edu

Date: Tuesday, Dec 9, 2008 at 4:45 PM

Amy,
You have permission to use the "Spirituality Assessment Scale (SAS)" in your dissertation described below. I have attached materials related to the SAS, including the SAS itself that may be copied for use. Thank you for your interest in the SAS, and best wishes in your research!

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Judy W. Howden, PhD, RN
Louise Herrington School of Nursing
Baylor University
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Permission to Use the Toronto Alexithymia Scale-20 (TAS-20)

From: Grame Taylor graeme.taylor@utoronto.ca

To: Amy Carrier atcarrie@uncg.edu

Date: Friday, Dec 5, 2008 at 5:38 PM

Dear Amy:

Thank you for payment of the copyright fee for the TAS-20. The TAS-20 package is attached.

All the best with your research.

Sincerely,

Graeme J. Taylor, MD
Professor of Psychiatry
University of Toronto

Permission to Use the Five Facet Mindfulness Questionnaire (FFMQ)

From: Amy Carrier atcarrie@uncg.edu

To: Ruth Baer rbaer@uky.edu

Date: Tuesday, Sep 9, 2008 at 8:09 PM

Hello Dr. Baer,

My name is Amy Carrier and I am a PhD student in the Counseling and Counselor Education department at The University of North Carolina at Greensboro. I am interested in using the FFMQ as one of the instruments for my dissertation. I am studying the effect of spirituality on anxiety and depression as moderated by mindfulness and alexithymia in breast cancer patients. I am writing with the hope that you will be able to inform me on the best way of obtaining the FFMQ as I need to submit a copy of it along with my IRB application. If you need any further information please let me know.

Many thanks,
Amy
--
Amy Tais Carrier, M.A, NCC
Doctoral Student
Counseling and Counselor Education
The University of North Carolina at Greensboro

From: Ruth Baer rbaer@email.uky.edu

To: Amy Carrier atcarrie@uncg.edu

Date: Wednesday, Sep 10, 2008 at 8:16 AM

Dear Amy,

You're welcome to use the FFMQ and I've attached a copy along with a couple of recent papers.

Good luck with your project!

Ruth Baer

University of Kentucky

Permission to Use the Trimodal Anxiety Questionnaire (TAQ)

From: Amy Carrier atcarrie@uncg.edu

To: Paul Lehrer Lehrer@umdnj.edu

Date: Tuesday, Sep 9, 2008 at 8:20 PM

Hello Dr. Lehrer,

My name is Amy Carrier and I am a PhD student in the Counseling and Counselor Education department at The University of North Carolina at Greensboro. I am writing you because I am interested in using the Trimodal Anxiety Questionnaire (TAQ) as one of the instruments in my dissertation. I will be researching the effect of spirituality on anxiety and depression as moderated by alexithymia and mindfulness in breast cancer patients. I am hoping that you can inform me of the best way of obtaining the TAQ for use in my dissertation. If you need any further information please let me know.

Many thanks,
Amy
--
Amy Tais Carrier, M.A, NCC
Doctoral Student
Counseling and Counselor Education
The University of North Carolina at Greensboro

From: Paul Lehrer Lehrer@umdnj.edu

To: Amy Carrier atcarrie@uncg.edu

Date: Wednesday, Sep 10, 2008 at 8:52 AM

Please send me your address and I can send you a copy

Paul Lehrer, PhD

Professor of Psychiatry

University of Medicine and Dentistry of New Jersey

Robert Wood Johnson Medical School

Permission to Use the Center for Epidemiologic Studies
Short Depression Scale (CES-D 10)

From: Amy Carrier atcarrie@uncg.edu

To: Elena Andresen Andresen@phhp.ufl.edu

Date: Tuesday, Sep 9, 2008 at 9:37 PM

Hello Dr. Andresen,

My name is Amy Carrier and I am a PhD student in the Counseling and Counselor Education department at The University of North Carolina at Greensboro. I am writing you because I am interested in using the Center for Epidemiologic Studies Short Depression Scale as one of the instruments in my dissertation. I will be researching the effect of spirituality on anxiety and depression as moderated by alexithymia and mindfulness in breast cancer patients. I am hoping that you can inform me of the best way of obtaining the CES-D10 for use in my dissertation. If you need any further information please let me know.

Many thanks,
Amy
--
Amy Tais Carrier, M.A, NCC
Doctoral Student
Counseling and Counselor Education
The University of North Carolina at Greensboro

From: Elena Andresen Andresen@phhp.ufl.edu

To: Amy Carrier atcarrie@uncg.edu

Date: Wednesday, Sep 10, 2008 at 9:12 AM

Hi Amy – no problems in using the CESD10. Attached is a new report on this (not published yet), where we consider if two questions might be dropped, but you would be best to use all ten. The questions are at the end. The CESD20 is in the public domain, and the shorter version is also because public money funded the work.

Elena

APPENDIX D: INFORMED CONSENT FORM

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

CONSENT TO ACT AS A HUMAN PARTICIPANT: LONG FORM

Project Title: The Breast Cancer Experience Project Director: Amy T. Banner

Participant's Name: _____

What is the study about?
This study involves research. It is designed to gather information about the breast cancer experience.

Why are you asking me?
Your participation is asked because you are a woman in treatment for Stage I, Stage II, or Stage III breast cancer.

What will you ask me to do if I agree to be in the study?
If you agree to participate, you will be asked to answer questions about your breast cancer experience. These questions should take 15 – 30 minutes to complete. You may return your answers in the stamped envelope provided.

What are the dangers to me?
The questions in the study require reflection on your experience with breast cancer. Because of this, you may feel negative emotions. If you wish to speak with someone about your emotions, you may contact Julie Lanford with Cancer Services at 336-760-9983.

If you have any concerns about your rights or how you are being treated please contact Eric Allen in the Office of Research and Compliance at UNCG at 336-256-1482. Questions about this project or the benefits or risks associated with being in this study can be answered by Amy Banner (336-404-8646) or Dr. Craig Cashwell (336-334-3427).

Are there any benefits to me for taking part in this research study?
You may learn something about yourself from answering questions about your breast cancer experience. You may have positive feelings about contributing to research that may help other breast cancer patients.

Are there any benefits to society as a result of me taking part in this research?
Breast cancer affects over 180,000 American women each year. This study will provide information that may help counselors and other health care professionals provide the best possible care to breast cancer patients.

Will I get paid for being in the study? Will it cost me anything?
The $1 bill included in this packet is offered in appreciation for your time. There are no costs to you for participating in this study.

How will you keep my information confidential?
All information obtained in this study is strictly confidential unless disclosure is required by law. Your information will be kept private in several ways. You will not be required to include your name on any of the forms. If you choose to participate in this study, the informed consent may be returned either signed or unsigned, whichever you prefer. Regardless, this form will be kept separate from the rest of your packet. All forms will be kept in a locked desk in a locked office. After this researcher's graduation and until her faculty position begins in August 2009, these forms will be kept in the researcher's home under double locks. At the end of this study, all documents will be destroyed. Specifically, the consent form will be destroyed by shredding after 3 years whereas all other data will be destroyed by shredding after 5 years.

What if I want to leave the study?
You have the right to refuse to participate or to withdraw at any time, without penalty. If you do withdraw, it will not affect you in any way. If you choose to withdraw, you may ask that any of your data which has been collected be destroyed unless it is in a de-identifiable state.

What about new information/changes in the study?
If significant new information relating to the study becomes available which may relate to your willingness to continue to participate, this information will be provided to you.

Voluntary Consent by Participant:
By signing this consent form you are agreeing that you read, or it has been read to you, and you fully understand the contents of this document and are openly willing to consent to take part in this study. All of your questions concerning this study have been answered. By signing this form, you are agreeing that you are 18 years of age or older and are agreeing to participate, or have the individual specified as above as a participant participate, in this study described to you by Amy Banner. Signing this consent form is optional and not necessary for participation in this study. Therefore, if you choose to participate in this study and prefer not to sign this informed consent form, simply return one copy of the unsigned form along with your completed research packet.

Signature: _____ Date: _____

APPENDIX E: PILOT STUDY

Pilot Study

The primary purpose of this pilot study was to assess procedures and instructions for clarity and feasibility. Additionally, the first research question of the full study was analyzed using pilot data in order to assess data analysis procedures, and to create and test the database to be used for the full study. Although the pilot sample size does not allow conclusions to be drawn from this data, the research results of the first question are provided below. Research questions 2, 3, 4, and 5 were not analyzed using pilot data due to the small sample size.

Research Questions and Hypotheses

Research Question 1: What are the relationships among spirituality, anxiety, and depression among women with Stage I, Stage II, and Stage III breast cancer?

Hypothesis 1: Spirituality will be negatively correlated with anxiety and depression among women with Stage I, Stage II, and Stage III breast cancer.

Research Question 2: How do alexithymia and mindfulness moderate the relationship between spirituality as a predictor variable and anxiety as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer?

Hypothesis 2a: Alexithymia will moderate the relationship between spirituality and anxiety such that higher alexithymia will weaken the relationship between spirituality and the criterion variable.

Hypothesis 2b: Mindfulness will moderate the relationship between spirituality and anxiety such that higher mindfulness scores will strengthen the relationship between spirituality and the criterion variable.

Research Question 3: How do alexithymia and mindfulness moderate the relationship between spirituality as a predictor variable and depression as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer?

Hypothesis 3a: Alexithymia will moderate the relationship between spirituality and depression such that higher alexithymia will weaken the relationship between spirituality and the criterion variable.

Hypothesis 3b: Mindfulness will moderate the relationship between spirituality and depression such that higher mindfulness scores will strengthen the relationship between spirituality and the criterion variable.

Research Question 4: After controlling for the effects of spirituality, alexithymia, and mindfulness on anxiety, how do demographics such as age, parental status, relationship status, stage of breast cancer, type of surgical treatment received, and family's history of cancer further predict anxiety among women with Stage I, Stage II, and Stage III breast cancer?

Hypothesis 4: Demographic factors will account for additional variance in anxiety among women with Stage I, Stage II, and Stage III breast cancer beyond what is accounted for by spirituality, alexithymia, and mindfulness.

Research Question 5: After controlling for the effects of spirituality, alexithymia, and mindfulness on depression, how do demographics such as age, parental status, relationship status, stage of breast cancer, type of surgical treatment received, and family's history of cancer further predict depression among women with Stage I, Stage II, and Stage III breast cancer?

Hypothesis 5: Demographic factors will account for additional variance in depression among women with Stage I, Stage II, and Stage III breast cancer beyond what is accounted for by spirituality, alexithymia, and mindfulness.

Participants

Participants were five breast cancer patients in treatment at a regional cancer center in the Southeast. All participants were diagnosed with non-metastatic (Stage I, Stage II, or Stage III) breast cancer and had begun treatment. Participants were female. Additional demographic information can be found in Table 9.

Instrumentation

Participants completed a packet of instruments including the Spiritual Assessment Scale (SAS), the Toronto Alexithymia Scale twenty item version (TAS-20), the Five Facet Mindfulness Questionnaire (FFMQ), the Trimodal Anxiety Questionnaire (TAQ), and the Center for Epidemiologic Studies Short Depression Scale (CESD-10). Additionally, participants completed a brief demographic questionnaire.

Procedures

Permission to perform the pilot study was requested from and provided by the University of North Carolina at Greensboro's and Moses Cone Health System's Institutional Review Boards. After approval was secured, the approved flyers advertising this pilot study were distributed at a regional cancer center in the Southeast. Participants contacted this researcher by phone or email to express their interest in the study. The researcher and each participant agreed upon a date and time to meet and complete the research packet. The researcher met each participant at her cancer treatment center at the

designated time, provided the participant with an informed consent, answered any questions, and provided the participant with the research packet. The assessment packets were completed in 15-30 minutes.

Data Analysis and Overview of Results

Frequencies were computed for demographic questions. The results of these preliminary analyses are provided in Table 9. Chronbach alphas were computed to assess the reliability of each of the instruments; this information is provided in Table 10. Each hypothesis and results are presented below.

Hypothesis 1. To test hypothesis 1 regarding the strength and direction of the relationships between spirituality and anxiety, spirituality and depression, and anxiety and depression, Pearson Product-Moment Correlation Coefficients were computed. None of the correlations were significant, likely due to the small sample size. Results are provided in Table 11.

Because of the small sample size, Hypotheses 2a, 2b, 3a, 3b, 4, and 5 were not tested.

TABLE 9
Demographic Description of the Pilot Study Sample (n=5)

Variable		**Mean**	***n***	**%**
Age		*M*=46.20	5	100
Parental status	Has children		3	60
	Does not have children		2	40
Relationship status	In a committed relationship		5	100
	Not in a committed relationship		0	0
Stage of breast cancer	Stage I		1	20
	Stage II		3	60
	Stage III		1	20
Type of surgical treatment	None		1	20
	Lumpectomy		2	40
	Partial Mastectomy		2	40
	Full Mastectomy		0	0
Family history of cancer?	Yes		1	20
	No		4	80

TABLE 10
Pilot Study Instrument Descriptive Statistics (n=5)

Instrument	***M***	***SD***	**α=**	**# of Items**
Spirituality Assessment Scale	140	14.76	.936	28
Toronto Alexithymia Scale	49.4	7.67	.652	20*
Five Facet Mindfulness Questionnaire	117	25.37	.949	39
Trimodal Anxiety Questionnaire	141	21.69	.617	36
Center for Epidemiologic Studies Short Depression Scale	14.8	7.73	.925	10

*Only 19 of the TAS' 20 items were run due to the complete lack of variance of the scale's first item.

TABLE 11
Pilot Study Pearson Product-Moment Correlations (n=5)

Variable	**Spirituality**	**Anxiety**	**Depression**
Spirituality	--	-.340	.035
Anxiety	-.340	--	-.814
Depression	.035	-.814	--

* significant at the $p<.01$

APPENDIX F: WOMEN'S SPIRITUALITY

APPENDIX F: WOMEN'S SPIRITUALITY

INTRODUCTION

In the midst of designing this study, it became clear that an important aspect of the spirituality of breast cancer patients had been neglected, the women's spirituality perspective. It was decided that because this is a study about the spirituality of a group of women, the context of women's spirituality should not be ignored. As part of an effort to correct this oversight, the researcher wrote eight questions to address women's spirituality. Together, these eight items were called the Women's Spirituality Questionnaire and were included in the research packet that was mailed to all participants.

This appendix provides a discussion of women's spirituality, its importance to the study of spirituality among breast cancer patients, and its role in the counseling of breast cancer patients. Next, the research questions of the main part of this study will be re-designed and analyzed to assess the results of including the eight items of the Women's Spirituality Questionnaire. Finally, these results will be interpreted and applied to the counseling of breast cancer patients.

Given the research supporting the theory that spirituality may be particularly important to women with breast cancer, it follows that *women's spirituality* may be especially important to the experience of women with breast cancer. Further, because the population of this study is women, and the women who participate in this study were asked to answer questions about their personal spirituality, it is important to consider, in

particular, the unique qualities of women's spirituality. Whereas there are aspects of women's spirituality that also are present in other spiritual approaches and traditions, women's spirituality has been shaped by distinct political, legal, economic, social, educational, biological, psychological, relational, and religious realities specific to women as a group (Spretnak, 1982). For this reason, women's spirituality may be considered a distinct spiritual approach (Ruth, 1994).

Like all forms of spirituality, women's spirituality is difficult to distill into one definition (Plaskow & Christ, 1989). A partial explanation for this is that no two women share an identical approach to spirituality (Plaskow & Christ). There are, however, common themes across women's spirituality. For example, power often is viewed as immanent, not external, in women's approaches to spirituality (Spretnak, 1982; Ruth, 1994). Similarly, divinity or the divine also may be considered as indwelling or embodied and as available to all, without rules or restrictions, in the here and now (Spretnak). Specifically, spirit is seen as inseparable from body; therefore, body becomes a conduit of spirit (Ruth).

This perspective contributes to the respect of and appreciation for the body and nature that are inherent to women's spirituality (Christ, 1982). In addition, when women believe that power and divinity reside within themselves, they may be more likely to trust their own strength, wisdom, and experiences during difficult times (Christ, 1982; Ruth, 1994; Spretnak, 1982; Stone, 1982). This focus on immanent power is an important aspect of women's spirituality, and one that may be a particularly important resource to

women struggling to meet the physical and emotional challenges of breast cancer (Keitel & Kopala, 2000).

Another important aspect of women's spirituality is the reaffirmation of the connection that is intrinsic to all beings (Keller, 1986; Plaskow & Christ, 1989; Spretnak, 1982). In patriarchal societies and religions, the inter-relatedness of all living beings often is forgotten, ignored, or denied (Keller). Women's spirituality reminds us of our intrinsic connections and of the benefits of these connections (Davis & Weater, 1982; Keller; Ruth, 1994). When the reality of this inter-relatedness is acknowledged, one is reminded that she is not alone, and that comfort may be found in the community of interconnectedness. For women with breast cancer, who often experience a sense of isolation and a desire for connection, the recognition of intrinsic inter-relatedness may be essential (Spiegel & Kimerling, 2001).

It has been argued that in order to understand a person's spiritual needs, the context of her or his life experiences must first be considered (Treitler, 2008). Further, women have different life experiences and experience life differently than do men (Treitler). Therefore, women can be considered to have distinct spiritual needs (Treitler). When examining spirituality among women, then, it is important to consider the distinct aspect of women's spirituality. For these reasons, a brief history and current themes of women's spirituality are presented below.

REVIEW OF RELATED LITERATURE

Religion as we know it is a relatively recent occurrence. Prior to the emergence of Abrahamic religion around 1800 b.c.e., the many forms of the Goddess were the focus of

worship and wonder. In fact, evidence of these pre-patriarchal religions dates back to 25,000 b.c.e, indicating that the worship and appreciation of the feminine has a long history (Spretnak, 1982).

Pre-Patriarchal Religion

At the heart of these Goddess religions was awe for the powerful rhythms and abilities of the earth and of women's bodies (Flinders, 1998; Spretnak, 1982). In other words, the Goddess was recognized in the everyday matters of this world. She was immanent, present in the activities of life and in all living beings (Fukuyama, Siahpoush, & Sevig, 2005). The cyclical rhythms of the changing seasons, of the waxing and waning moon, and of birth and death were associated with the cyclical rhythms of women's bodies, their ability to give birth, and of their development from maiden to mother and crone (Flinders; Spretnak). It is likely that this association contributed to the recognition of women's power and the reverence given to the Goddess.

For example, birth and those who gave birth, were believed to be sacred (Flinders, 1998). In addition, the Creator in pre-patriarchal societies was believed to be female (Stone, 1982). The Hopi creation story revolves around the Goddess known as Spider Woman and the Hindu creation story revolves around the Goddess known as Devi. In both of these stories, the qualities of power, intelligence, leadership ability, protection, wisdom, creativity, and nourishment all were attributed women (Fukuyuma et al., 2005). It is important to note that these stories portray women as possessing both types of the qualities that today are labeled "feminine" and "masculine." One can conclude, then, that

these Goddess worshipping societies were not restricted in their views of women in the same ways that later societies were.

Patriarchal Religion

The fact that relatively few in today's society are aware that this period of Goddess religions existed, is a product of the enormous efforts taken by patriarchal religions to suppress, disempower, and desanctify women. At some point, the awe once held for women's abilities and their connection to Life turned to envy, resentment, and fear. With this change came the birth of patriarchy and its attempts to prevent women from reaching their potential (Spretnak, 1982).

In the beginning, Abrahamic monotheism discredited Goddess religions by ascribing creation to a male God (Flinders, 1998). Next, Eve's curiosity and disobedience caused Adam to sin and resulted in the separation of humankind from God (Christ, 1982). After that, female sexuality was declared sinful (Flinders). Then, God's covenant with humankind required circumcision and women's access to God was limited to their role as mothers (Flinders). Further, celebrations of and reverence for the birth-giver ceased (Christ) and women, their bodies, and their biological functions went from sacred to unclean (Spretnak). Finally, the Virgin Mary met the new standards set for women by submitting to God's will and giving birth without the stain of sexuality (Flinders). Thus, women could be one of two ways: sexual and disobedient or pure and submissive (Flinders). These lies about the nature and function of women (Spretnak) helped to strip them of the power, status, and autonomy that had been theirs in ancient cultures and societies (Stone).

This disempowerment and devaluing of women can be contrasted with the glorification of the male Godheads of Judaism, Christianity, Islam, and Hinduism (Spretnak, 1982). The male symbolism of the divine and exclusion of women from positions of power ensured that men were the leaders of these hierarchical religions (Christ, 1982; Fukuyama et al., 2005; Spretnak).

In most of these religions, the spiritual or holy life has been associated with separation from others and withdrawal from everyday life (Keller, 1986; Ruth, 1994). Often, this has had the unfortunate effect of putting the spiritual in conflict with the world and the body (Ruth). In addition, this notion of holiness as separation bolstered, and was bolstered by, the symbology of a separate and distant Father God (Keller). This glorification of separation coupled with the selflessness that came to be expected from women was particularly destructive to the pre-patriarchal belief that all living beings are connected and that women are independent. (Keller). In all these ways, patriarchal religions instituted and maintained the subordination of women in religion and society (Flinders, 1998; Stone, 1982). This process took approximately 2,500 years and eventually, patriarchy and the notion of male superiority emerged victorious (Flinders). The level of success of these efforts is evident in the struggles of modern women as discussed below.

Effects of Patriarchal Religion on Women

One of the most wide-sweeping effects of patriarchal religion on women is that women now live in androcentric societies (Spretnak, 1982). Androcentric societies emphasize and are created around the masculine point of view. By their very nature, these

societies do not reflect or value women's ways of being (Spretnak). Even the language we use has been shaped by androcentric perspectives (Spretnak). Thus, it may be impossible to elucidate all the ways in which patriarchal religion has affected women. It is clear, however, that women's relationships with the divine, with each other, and with themselves have been affected.

Separation from the Divine

Because symbols operate at a sub-rational level, they carry power regardless of whether we agree with their meaning (Christ, 1982). The symbolism of God as male is pervasive and powerful (Christ; Fukuyama et al., 2005). A male symbol of God implies that what is female cannot be divine. It also implies that females cannot relate to the male God and vice versa. Essentially, if God is male, female is "other." For women, this symbology may be a barrier to the divine (Christ).

In addition to this male symbology of the divine, patriarchal theology often presents the divine as distant, judging, and punishing (Flinders, 1998). These characteristics are in conflict with the in-dwelling, loving, nurturing nature attributed to the divine in pre-patriarchal times (Christ; Davis & Weater, 1982; Flinders; Spretnak, 1982; Stone, 1982). Thus, many women find this patriarchal theology prohibitive to their experience of the divine (Flinders; McFague, 1989; Ruth, 1994; Walker, 1989).

If the symbology and theology of a male God were not enough to keep women outside of the divine community, the official restrictions against women within religious institutions completed the barrier. Women have been silenced in many religious institutions (Flinders, 1998). Some denominations continue to forbid women from acting

as clergy (Fukuyama et al., 2005). Fukuyama et al. used the term "religious wounding" to describe the emotional and psychological pain caused by these restrictions that have inhibited women's spirituality and have separated them from their experience of the divine.

Separation from One Another

Patriarchal religion taught and enacted hostility towards the female half of the human population (Ruth, 1994). Women have internalized these teachings and often are hostile towards and mistrustful of one another. In fact, women may hold each other to stricter standards than those set by patriarchal religion and can be ruthless in the judgment and punishment of the Eves of society (Flinders, 1998). In these ways, women have been separated from one another and have lost the support, and connection that once were available within their sisterhood (Flinders).

Separation from Self

In a similar way, women have been separated from themselves. The patriarchal portrayal of women has influenced the legal, educational, political, economic, medical, and psychiatric systems of our society (Spretnak, 1982). The assumptions of women's inferiority have become "natural truths" or common sense (Flinders, 1998; Spretnak; Stone, 1982). In turn, women have internalized these "natural truths" about themselves (Flinders, 1998) and have come to see themselves as "other" (Keller, 1986). Rigid gender roles and ideas of what qualities are acceptable for each gender have been internalized (Flinders; Keller). Women as "other" can be ignored and devalued, yet depended upon (Keller). As Flinders described, women have been taught that they are inferior for so long

that they find it difficult *not* to put the desires of others before their own. This, Flinders argued, may be the final triumph of patriarchy, that women voluntarily surrender their rights and deny their own needs and desires on a daily basis. After denying one's desires for so long, it becomes difficult to know what one wants. If this separation from self continues within a woman,

> there is a certain kind of fire and light that will quite possibly never ignite in [her] life. [She] won't know how to reach out for what matters most or even, possibly, to recognize it when it comes—when it whispers to [her], from the depths of [her] own being" (Flinders, 1998, p. 76).

With such separation from self comes a loss that touches every part of a woman's life. Fortunately, women have begun to re-build their connections to the divine, to one another, and to themselves; they are recreating a world in which their gifts and perspectives are valued (Ruth, 1994).

Rediscovery of Pre-Patriarchal Women's Spirituality

In order for women to rebuild these broken connections, feminists agree that an alternative to patriarchal religion is essential (Ruth, 1994). Fortunately, despite the pervasiveness of patriarchal religion, vestiges of Goddess religions and pre-patriarchal women's spirituality remained and were recorded (Christ, 1982; Gimbutas, 1982; Rich, 1982). The knowledge of these ancient images of womanhood provide women with an opportunity for pride, a sense of heritage, and a reminder of strength (Stone, 1982). The lives and spirituality of Julian of Norwich, Clare of Assisi, and Catherine of Genoa, women of patriarchal times who were courageous enough to trust their own experiences

of the divine, also are inspiring to women who are beginning to rediscover their spiritual heritage (Flinders, 1998). These aspects of women's spiritual history signify that others have gone before us and that what we hope for is not only possible but that it has already occurred; they are the foundation that helps us move forward (Flinders; Ruth; Stone).

Characteristics of Women's Spirituality

Part of the beauty of women's spirituality is it multiplicity. There are many ways of making meaning and of experiencing (Keller, 1986; Ruth, 1994). Each woman's spirituality is personal and created out of her own experiences; indeed, it must be this way for spirituality to be useful (Ruth). It can be found in the Goddess, within oneself, in the ocean, in the moon, in a tree, in coincidences, in the flight of a bird, in the lighting of a candle, chanting, meditating, alone, or with other women (Stone, 1982). It is different to the same woman at different times depending on her needs (Christ, 1982). While women's spirituality encompasses many ways of being, it is characterized by the affirmation of female power, female will, the female body, and women's bonds and heritage (Christ).

Connection and Inter-relatedness

Essential to women's spirituality is a rediscovery of our connection to one another, of the innate and intrinsic unity of all (Davis & Weater, 1982; Spretnak, 1982). All are one and all are part of the divine (Flinders, 1998; Spretnak). Although each woman is unique, she shares in the sisterhood available to and created by all women (Davis & Weater). In recognizing this essential unity, women are supported in asserting their wills in cooperation with other wills; they are able to harness and use power in a

way that does not disempower others (Davis & Weater). After centuries of the patriarchal teaching of separateness, the reality of this inter-relatedness often has been forgotten (Keller). In trusting our own experiences, however, it can be remembered. "The relations between things are as delicate as spider's silk, known only instinctively…yet strong enough to hang a bridge on" (Keller, 1986, p. 218). Meditation, dance, music, and ritual can help women remember their connectedness by moving the conscious perception beyond the incorrect teaching that we are separate from one another (Spretnak).

Embodiment / Immanence

These same activities can remind us of the immanent nature of the divine, as well. Important to women's spirituality and to women's reconnection to the divine, is the notion that the divine is accessible to all in the here and now (Spretnak, 1982). After centuries of the patriarchal image of the divine as separate and distant, to remember and re-experience that the divine resides within can be revolutionary (Ruth, 1994; Spretnak). When the embodiment of Spirit is remembered, it is impossible to separate the divine from the physical body; therefore, it is impossible not to remember that the flesh is sacred, strong, powerful, and beautiful (Ruth).

Appreciation of the Body and its Functions

Further, the embodiment discussed above may help women to reconnect to the body and its desires (Flinders, 1998). Patriarchal religion rejected the body as sinful. In contrast, women's spirituality involves an appreciation of and awe for the body and its functions (Christ, 1982). The body is viewed as beautiful and is treated with respect (Christ; Ruth, 1994). Cycles of the body are acknowledged and celebrated (Ruth). For

many centuries, the sanctity of the body has been left out of spiritual rituals; women's spirituality strives for holism by including the body (Davis & Weater, 1982; Ruth; Spretnak, 1982).

Trusting and Acting Upon One's Own Experience

Finally, the need to find one's voice is at the core of women's spirituality (Flinders, 1998). After being silenced by patriarchal religion's restrictions, women need to re-connect with themselves and with their own desires in order to grow spiritually (Flinders). When women are connected with their true selves, they can be strengthened and guided by their own wisdom (Stone). Part of trusting one's own experience is learning to greet emotions as message bearers (Keller, 1986). By learning from these emotions without identifying with them, women can learn to trust and act upon their own experiences (Keller).

Importance of Women's Spirituality to Breast Cancer Patients

By reconnecting with themselves, their bodies, one another, and their own experience of the divine, women can move towards wholeness (Ruth, 1994). It is difficult to imagine a group of women who could benefit from women's spirituality more than breast cancer patients. Breast cancer patients often report feeling alienated and isolated because of their diagnosis and researchers have reported that social support is beneficial to the physical and mental health of breast cancer patients (Spiegel & Kimerling, 2001). Further, it is not uncommon for breast cancer patients' friends and family to withdraw out of fear and awkwardness at a time when these women need their support the most (Spiegel & Kimerling). Given their sense of isolation and need for connection, it seems

that breast cancer patients would benefit greatly from the connection with others essential to women's spirituality.

Further, breast cancer patients often feel that they are under attack from within by the breast cancer and from without by the treatments for breast cancer (Keitel & Kopala, 2000). They endure painful treatments and side-effects that may persist for months (Keitel & Kopala) and experience a loss of energy and vitality (National Cancer Institute, 2007). It seems that an awareness of the immanent nature of the divine might provide a sense of embodied strength for these women as they endure these bodily strains.

Breast cancer patients also report struggles related to body image, sexuality, and their overall experience of themselves as feminine beings (Keitel & Kopala, 2000). These concerns are magnified by the often disturbing physical effects of surgery and adjuvant treatment such as the loss of breast (Arena et al., 2006) and hair (Oxlad et al., 2008). Women's spirituality includes an appreciation of and awe for the female body and its functions (Christ, 1982) and regards the body as beautiful (Ruth, 1994). It seems that these elements of women's spirituality may be powerful and healing to women who are struggling to accept the changes in their bodies.

Research indicates that breast cancer patients struggle with alexithymia, or emotional restriction, as well (Manna et al., 2007). Women's spirituality encourages women to find their voice and to express themselves. Thus, women's spirituality may prove helpful to breast cancer patients who are experiencing alexithymia.

Summary

In this section, a review of the literature related to women's spirituality and its importance to breast cancer patients has been provided. Specifically, the history and characteristics of women's spirituality have been presented. In summary, the following has been highlighted: 1) pre-patriarchal religion honored women, women's abilities, and women's bodies, 2) patriarchal religion disempowered and desanctified women and separated them from their experience of the divine, from one another, and from themselves, 3) women have re-discovered pre-patriarchal spirituality, 4) women's spirituality can be characterized by connection, embodiment of spirit, appreciation of the body and its functions, and trusting one's own experience, and 5) breast cancer patients may benefit from these aspects of women's spirituality.

The eight women's spirituality items will address the importance of examining breast cancer patients' spirituality within the context of women's spirituality.

METHODOLOGY

As discussed in the literature review above, connection, immanence, appreciation of the body, and internal authority are characteristic of women's spirituality and may be beneficial to breast cancer patients. In an attempt to address these elements of women's spirituality in the current study about spirituality among breast cancer patients, eight women's spirituality items were written and included in the survey packet mailed to study participants. These items were written as a supplement to the full, original Spirituality Assessment Scale (SAS; Howden, 1992), which was also included in the

survey packet that was mailed to study participants. These eight items are called the Women's Spirituality Questionnaire (WSQ).

Instrument Construction

In order to create the WSQ, this researcher read the items of the SAS (Howden, 1992) from a women's spirituality perspective. Items that were not consistent with the values of women's spirituality were re-written. Then, these eight re-written items were included in addition to and separate from the full, original SAS. See Table 12 for a comparison of the eight original SAS items and the eight women's spirituality items written to supplement these original items.

After these items were written, they were included in the packet of instruments that was mailed to 200 women diagnosed with Stage I, Stage II, and Stage III breast cancer who had received surgical treatment within the past year or who were currently receiving radiation, chemotherapy, hormone therapy, or biological therapy. A total of 69 research packets were analyzed using SPSS 16.0 for Windows (SPSS Inc., 2007). For a full description of the methodology, see Chapter III of this document.

TABLE 12
Comparison of Original SAS Items with WSQ Items

Original SAS Items	Corresponding WSQ Items
2. I am able to forgive people who have done wrong to me.	I am able to be gentle with myself and others.
3. I have the ability to rise above or go beyond a physical or psychological condition.	I am able to embrace my current physical, emotional, and psychological condition.
9. I enjoy being of service to others.	I enjoy giving and receiving.
11. I have the ability to rise above or go beyond a body change or body loss.	I can remain gentle with and connected to my body during physical change and loss.
17. I have a sense of balance in my life.	I have a sense of integration in my life.
25. Reconciling relationships is important to me.	Maintaining healthy, mutually respectful, and genuine relationships is important to me.
27. My inner strength is related to a belief in a Higher Power or Supreme Being.	My inner strength is nurtured by my experience of the divine.
28. I have goals and aims for my life.	I am maturing and opening.

Data Analysis

The Women's Spirituality items were added to the original analyses conducted for the main portion of this study and were analyzed for heuristic purposes. First, descriptive statistics and instrument reliability were computed for the WSQ. Next, the eight items of the WSQ were added to the SAS to determine whether the WSQ items affect the reliability of the SAS.

Then, the WSQ items were added to Research Question 1. This new version of Research Question 1 (i.e., What are the relationships among spirituality, women's spirituality, anxiety, and depression among women with Stage I, Stage II, and Stage III breast cancer?) was analyzed using a Pearson product moment correlation. This analysis

assessed the nature and strength of the bivariate relationships between spirituality and women's spirituality, women's spirituality and anxiety, and women's spirituality and depression.

Next, a simple linear regression was performed to analyze the relationship between women's spirituality as a predictor variable and anxiety as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer. Similarly, a simple linear regression was performed to analyze the relationship between women's spirituality as a predictor variable and depression as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer. These analyses were designed to assess the predictive ability of women's spirituality on both anxiety and depression among breast cancer patients.

Then, the women's spirituality items were added to the spirituality items, creating a new variable (combined spirituality). A simple linear regression was performed to analyze the relationship between combined spirituality as a predictor variable and anxiety as a criterion variable among women with Stage I, Stage II, and Stage III breast cancer.

Likewise, a simple linear regression was performed to analyze the relationship between combined spirituality as a predictor variable and depression as a criterion variable. These analyses were designed to determine whether women's spirituality increased the variance in anxiety and depression among breast cancer patients that could be accounted for by the more traditional measure of spirituality.

RESULTS

The purpose of these additional analyses was to address the elements of women's spirituality in the current study about spirituality among breast cancer patients. This was accomplished by adding the items of the WSQ to the analyses that were performed for the main portion of this study. In this section, results of these additional analyses are presented for heuristic purposes.

Descriptive Statistics and Instrument Reliability

The range, mean, and standard deviation were calculated for the WSQ. These results are provided in Table 13.

TABLE 13
Sample Score Range, Mean, and Standard Deviation for WSQ (n = 69)

Instrument	Sample Range	Sample Mean	Sample SD
Women's Spirituality Questionnaire	27 – 48	40.96	4.58

In order to demonstrate evidence of reliability for the current sample, a measure of internal consistency was computed for the WSQ using Cronbach's alpha coefficient. Then, a measure of internal consistency was computed for the combined items of the SAS and the WSQ using Cronbach's alpha coefficient. These results are provided in Table 14. Estimates of internal consistency ranged from .87 to .96. In social science research, the general consensus is that instrument reliability of .70 is adequate, and that instrument reliability of at least .80 is desirable (Heppner, Kivlighan, & Wampold, 1999). Accordingly, all scales, including the new WSQ exceeded acceptable alpha levels for

social science research. Interestingly, adding the WSQ items to the SAS slightly increased the reliability of the SAS.

TABLE 14
Instrument Scale Reliabilities for the WSQ, SAS, and Combined Spirituality Questionnaire

Instrument	# of Items	α in current sample
Women's Spirituality Questionnaire	8	.87
Spirituality Assessment Scale	28	.95
Combined Spirituality Questionnaire	36	.96

Research Question 1: WSQ Version

This new version of Research Question 1 was designed to assess the relationships among spirituality, women's spirituality, anxiety, and depression among women with Stage I, Stage II, and Stage III breast cancer. A Pearson product-moment correlation was used to assess the nature and strength of the relationships between spirituality and women's spirituality, women's spirituality and anxiety, and women's spirituality and depression. The results of the Pearson product moment correlation are presented in Table 15. Women's Spirituality was positively correlated with Spirituality ($r = .85$, $p < .01$) and negatively correlated with both Anxiety ($r = -.26$, $p < .05$) and Depression ($r = -.35$, $p < .01$).

TABLE 15
Pearson Product-Moment Correlations and Chronbach Alphas for Spirituality, Women's Spirituality, Anxiety, and Depression (n = 69)

	Women's Spirituality	Spirituality	Anxiety	Depression
Women's Spirituality	**.87**	.85**	-.26*	-.35**
Spirituality		**.95**	-.33**	-.50**
Anxiety			**.96**	.70**
Depression				**.72**

Simple Linear Regressions

Women's Spirituality as a Predictor of Anxiety and Depression

Two simple linear regression analyses were performed with women's spirituality. These analyses were designed to assess the relationship between both women's spirituality and anxiety and women's spirituality and depression. Using the Enter method, two linear regressions were performed. For the first regression, Women's Spirituality was entered as the predictor variable with anxiety as the criterion variable. Women's Spirituality accounted for 7% of the variance in anxiety ($R^2 = .07$, R^2 change = .07, $\beta = -.26$, $t = -2.20$, $p < .05$). These results are presented in Table 16.

TABLE 16
Linear Regression Analysis (Enter Method): Women's Spirituality as a Predictor of Anxiety

Variable	R^2	R^2 Change	β	Std. Error	*t*
Model Summary	**.07**				
Women's Spirituality	.07	.07	-.26	1.26	-2.20*

* p < .05

For the second regression, Women's Spirituality was entered as the predictor variable with depression as the criterion variable. Women's Spirituality accounted for 12% of the

variance in depression (R^2 = .12, R^2 change = .12, β = -.35, t = -3.08, p < .01). These results are presented in Table 17.

TABLE 17
Linear Regression Analysis (Enter Method): Women's Spirituality as a Predictor of Depression

Variable	R^2	R^2 Change	β	Std. Error	*t*
Model Summary	**.12**				
Women's Spirituality	.12	.12	-.35	.12	-3.08**

** p < .01

Combined Spirituality as a Predictor of Anxiety and Depression

Two simple linear regressions were performed with combined spirituality. These analyses were designed to determine whether women's spirituality increased spirituality's ability to predict anxiety and depression among breast cancer patients. Using the Enter method, two linear regressions were performed to assess this question. For the first regression, Combined Spirituality was entered as the predictor variable with anxiety as the criterion variable. Combined Spirituality accounted for 11% of the variance in anxiety (R^2 = .11, R^2 change = .11, β = -.32, t = -2.81, p < .01). These results are presented in Table 18.

TABLE 18
Linear Regression Analysis (Enter Method): Combined Spirituality as a Predictor of Anxiety

Variable	R^2	R^2 Change	β	Std. Error	*t*
Model Summary	**.11**				
Combined Spirituality	.11	.11	-.32	.26	-2.81**

** p < .01

For the second linear regression, Combined Spirituality was entered as the predictor variable with depression as the criterion variable. Combined Spirituality accounted for 23% of the variance in depression (R^2 = .23, R^2 change = .23, β = -.48, t = -4.49, p < .01). These results are presented in Table 19.

TABLE 19
Linear Regression Analysis (Enter Method): Combined Spirituality as a Predictor of Depression

Variable	R^2	R^2 Change	β	Std. Error	*t*
Model Summary	**.23**				
Combined Spirituality	.23	.23	-.48	.02	-4.49**

** p < .01

Summary

The results of the WSQ analyses were provided in this section. First, descriptive statistics of the instrument were provided, included range, mean, and standard deviation for the current sample. Then reliability coefficients were computed for the WSQ, the SAS (Howden, 1992), and the combined items of the SAS (Howden) and the WSQ for the current sample. Finally, two sets of simple linear regressions were performed; the first set used women's spirituality as the predictor variable and the second set used combined spirituality as the predictor variable.

The estimate of internal consistency for the WSQ was .87, therefore exceeding the acceptable alpha level for social science research. The estimate of internal consistency for the SAS (Howden, 1992) was higher than that for the WSQ, however. Interestingly, the estimate of internal consistency for the SAS (Howden) increased slightly when the items

from the WSQ were added. Women's Spirituality was positively correlated with Spirituality and negatively correlated with both Anxiety and Depression. Women's Spirituality was a significant predictor of anxiety, accounting for 7% of its total variance. Women's Spirituality also was a significant predictor of depression, accounting for 12% of its total variance. In addition, Combined Spirituality accounted for 11% of the variance in anxiety and 23% of the variance in depression. In the next section, these results and their implications for counseling breast cancer patients are discussed. Also, limitations are presented and directions for future studies are proposed.

DISCUSSION

In the previous section, results of the WSQ analyses were presented. In this section, these results are discussed. Also included in this section are limitations, implications for counselors working with breast cancer patients, and suggestions for future research.

Overview

The purpose of creating and analyzing the WSQ as an addendum to the current study was to address the elements of women's spirituality among breast cancer patients. Because spirituality occurs within the broader context of life, it is essential to understand the context of a person's life experiences before it is possible to understand that person's spiritual needs (Traitler, 2008). Further, because women's lives and experiences of life are different from those of men, women's spirituality is distinct from men's (Traitler, 2008). Given that the population of the current study was women and that the focus of the current study was spirituality, it was important to examine women's spirituality in the

current study. This was accomplished by providing a brief history of women's spirituality, a description of current themes in women's spirituality, and by creating and analyzing the Women's Spirituality Questionnaire. A detailed discussion of the results of the WSQ analyses is provided below.

Discussion of Results

Instrument Reliability

In order to demonstrate evidence of reliability for the current sample, a measure of internal consistency was computed for the WSQ using Cronbach's alpha coefficient. Then, a measure of internal consistency was computed for the combined items of the SAS (Howden, 1992) and WSQ using Cronbach's alpha coefficient. The reliability of the WSQ ($\alpha = .87$) exceeded the desirable level for social science research ($\alpha = .80$; Heppner et al., 1999). This indicates that this scale was reliable for this sample and suggests that this scale may be reliable among other samples of breast cancer patients. Further, the addition of the WSQ items to the SAS (Howden) increased the reliability of the SAS from .95 to .96. Although this increase in reliability was small, it may suggest that the items of the WSQ capture important information for this population.

Research Question 1: WSQ Version

This new version of Research Question 1 examined the relationships among women's spirituality, spirituality, anxiety, and depression. Women's spirituality was positively associated with spirituality. This correlation was strong ($r = .85$, $p < .01$), but not perfect. This may suggest that the WSQ measures slightly different aspects of spirituality than does the SAS (Howden, 1992). In addition, women's spirituality was

negatively associated with both anxiety ($r = -.26$, $p < .05$) and depression ($r = -.35$, $p < .01$). This suggests that participants who reported a higher level of women's spirituality were less likely to experience anxiety and depression. These relationships were not as strong as those between spirituality and anxiety ($r = -.33$, $p < .01$) or between spirituality and depression ($r = -.50$, $p < .01$), however. This may indicate that the elements of spirituality that are measured by the SAS (Howden) are more strongly associated with decreased anxiety and depression than the elements of spirituality that are measured by the WSQ.

Women's Spirituality as a Predictor of Anxiety and Depression

Two simple linear regressions were performed to assess the relationships between women's spirituality and anxiety and women's spirituality and depression. Women's spirituality accounted for 7% of the variance in anxiety and 12% of the variance depression. These results suggest that as women's spirituality increased, participants' experience of anxiety and depression tended to decrease. It is important to note, however, that spirituality accounted for a higher percentage of the variance in both anxiety (11%) and depression (25%) than did women's spirituality in the current study. This suggests that whereas women's spirituality was a significant predictor of both anxiety and depression, it was not a stronger predictor than spirituality among this sample of breast cancer patients.

Combined Spirituality as a Predictor of Anxiety and Depression

Combined spirituality was a significant predictor of anxiety ($R^2 = .11$, R^2 change = .11, $\beta = -.32$, $t = -2.81$, $p < .01$); however, the addition of women's spirituality did not

increase the variance in anxiety that was accounted for by spirituality as previously reported in the current study (R^2 = .11, R^2 change = .11, β = -.33, t = -2.87, p < .01). Similarly, combined spirituality was a significant predictor of depression ((R^2 = .23, R^2 change = .23, β = -.48, t = -4.49, p < .01); however the addition of women's spirituality did not increase the variance in depression that was accounted for spirituality as previously reported in the current study (R^2 = .25, R^2 change = .25, β = -.50, t = -4.72, p < .01).

Limitations

The results of these additional analyses provide valuable information regarding women's spirituality, spirituality, anxiety, and depression among breast cancer patients. As with all research, however, results must be viewed within the context of the limitations of the study. There are several limitations of this study that were previously discussed in the main discussion section of this dissertation and that apply to these additional analyses, as well. For example, the instruments used in these analyses rely upon self-report, all participants were recruited from one Cancer Services center in the same region and were at the same phase in the cancer experience, an adequate but moderate sample size was obtained, and spirituality is an ethereal concept that proves difficult to identify, define, and assess. In addition to these limitations to the full study, the additional analyses performed in this appendix have limitations of their own. For example, these analyses were examined for heuristic purposes. Also, the instrument used to measure women's spirituality, the WSQ, was newly created. Thus, before any implications of these results are applied to counselors' work with breast cancer patients,

further research on these items should be conducted. Specifically, whereas estimates of internal consistency indicate that the WSQ's items are measuring the same construct, the validity of the WSQ has not been determined. Finally, the WSQ was designed to supplement the items of the SAS (Howden, 1992); therefore, an instrument that addresses all of the main characteristics of women's spirituality should be created before it is used to replace the SAS in research.

Implications

These additional analyses were designed to address the elements of women's spirituality among breast cancer patients. The addition of the items of the WSQ to the items of the SAS (Howden, 1992) increased the reliability of the SAS from .95 to .96. Although this increase in reliability was small, it may suggest that the items of the WSQ capture important information for this population. Similarly, the positive correlation between spirituality and women's spirituality was strong, but not perfect. This may suggest that the WSQ measures slightly different aspects of spirituality than does the SAS (Howden). Thus, if future researchers obtain similar results, it may be important for counselors to address women's spirituality when working with breast cancer patients.

In addition, women's spirituality was negatively associated with both anxiety and depression and accounted for 7% of the variance in anxiety and 12% of the variance in depression on its own. These results indicate that as women's spirituality increases, anxiety and depression decrease. Therefore, it may be important for counselors working with breast cancer patients to address women's spirituality. It is important to note, however, that spirituality was a stronger predictor of anxiety and depression than was

women's spirituality. Similarly, the new variable, combined spirituality, accounted for 11% of the variance in anxiety and 23% of the variance in depression. Whereas significant, these percentages are not higher than those accounted for by spirituality alone. Together, these results indicate that it may be important for counselors working with breast cancer patients to address the elements of women's spirituality present in the WSQ in addition to, not as a replacement of, spirituality.

Future Research

At the completion of the current analyses, several options for future research are available. First, the items of the WSQ were reliable in their measurement within this sample of breast cancer patients; however, further tests of internal consistency need to be performed among larger, more diverse samples of breast cancer patients and among women who have not been diagnosed with breast cancer. Also, it may be interesting to perform item analyses to determine whether item deletion would increase the reliability of the WSQ. Further, the validity of this instrument remains to be determined. More importantly, the WSQ needs to be expanded to include all four of the main elements of women's spirituality that were discussed in the literature review section of this appendix. As it is, the WSQ was designed to supplement the SAS (Howden, 1992) by re-writing items that were not represented of women's spirituality and is not a complete measure of women's spirituality. It may be interesting to hold a focus group with women to hear their impressions about whether the WSQ adds to the SAS' (Howden, 1992) ability to capture their experience of spirituality. In addition, these women could be asked to describe the elements that are essential to their personal spirituality.

Conclusion

The current additional analyses examined elements of women's spirituality among women in treatment for non-metastatic breast cancer. Survey methodology was used and a sample of 69 breast cancer patients was obtained. Data were analyzed and results for each analysis were presented. Women's spirituality was negatively associated with anxiety and depression. These results were discussed and recommendations for counselors and future researchers were made.

These additional analyses highlighted the importance of women's spirituality. The results indicate the need for more research on women's spirituality as well as expansion of the construct itself. Given the nature of this construct, qualitative inquiries may best capture its role in the experiences of breast cancer patients. Although many questions remain unanswered, it appears that women's spirituality is salient to both anxiety and depression among breast cancer patients.

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